The Builder.

No. CCLXVIII.

SATURDAY, MARCH 25, 1848.

WRITERS on architectural history have never failed to dwell on the extraordinary activity displayed by the church builders of the mediæval period, and the great number of structures with which England was covered, almost as if by magic. "The land was as one vast workshop" has been echoed and re-echoed, and the strongest words used to impress this fact on their readers. An examination of what remains, scattered over our beautiful, and notwithstanding the income tax, still "merry England," shews that all our notions on this head, gained from these verbal statements, fall far short of the truth. Fanaticism, ignorance, and time have done their work with a vengeance; but still in the valley and on the hill,—in hamlet, village, town, and city, stand the beautiful monuments of the "dark ages," full of pleasant memories, beauty, and holiness. Misdirected zealots, penurious owners, improving churchwardens, and parish road-menders were beaten hollow and gave in, after a tough fight. To count those edifices which remain is still scarcely possible; many of them are yet not catalogued. But better times have come: the beauty of these structures, their value as works for imitation and as historical landmarks, are more fully recognized than they were, and will, it may be hoped, lead to their continued preservation.

Mr. Edmund Sharpe, in his work just now completed, under the title of "Architectural Parallels," intended to shew the progress of ecclesiastical architecture in England through the twelfth and thirteenth centuries, by means of a series of parallel examples,* affords a striking proof of the extent of our architectural riches. In this very admirable work, which claims from us the most prominent and emphatic notice that we can give, the illustrations embrace fourteen abbey churches of such great beauty and extent, that it might be supposed all England had been laid under contribution to produce them; yet on examination they are found to be, with two exceptions, all from one county, namely, Yorkshire.

A few words from the author's prospectus will best explain the nature of the undertaking:—

"As the design of this work is to exhibit, in the order in which they occurred, the *progressive changes* that took place in our national architecture during its most interesting periods, the subjects have been so selected as to present *parallel* instances of the manner in which the *same feature* was treated by the builders of different ages. Thus one portion of the work is devoted to the illustration of four or five interior compartments of the different churches selected, commencing from the earliest, in which so much of the building remains perfect, and descending to the latest; another portion to the illustration of four or five exterior compartments; a third to the transverse sections; a fourth to the east ends; two plates present the profiles of the different piers; others those of the capitals and bases, arch-mouldings, ribs, window-jambs, and so on. The perspective views are generally taken from the same points of view; and the details drawn, as far as is practicable, to the same scale. The whole work, therefore, comprises, as its title implies, a collection of such *parallels*.

The advantage of thus placing in juxtaposition and in chronological order the same parts of different buildings designed, as the abbey churches were, for the same purpose, and remaining, as they almost exclusively do, without subsequent alteration or addition, will at once be apparent to those who are interested in the study of ecclesiastical architecture."

The list comprises Fountains, Kirkstall, Byland, Whitby, Rievaulx, Netley, Tintern, St. Mary's at York, Bridlington, Guisborough, Selby and Howden; and these are fully set forth in 121 lithographic plates, in tinted outline, each 18 inches by 12 inches,—unusually large. They are capitally drawn, and make the details perfectly clear.

Great praise is due to Mr. Sharpe both for the idea and the way in which it is carried out. However interesting and valuable the illustration of the smaller buildings, such as parish churches are, as evincing frequently much ingenuity, originality, and good feeling, and often containing individual features of great beauty, it is in the larger conventual and cathedral churches that we are to look for the best record of the history of the art, and it is in these buildings, raised up for the same purpose, and remaining, as they almost exclusively do, in the condition they were in when desecrated, that we are to trace the progress of architecture. Departing from the practice of our day which is, to give the best and most obvious of many, rather than the whole of one,—to skim rather than dive,—our author has seized a speciality, and worked it thoroughly. Such a course is costly and laborious, and withal the buyers of such a book are necessarily fewer than of more general works: there is the greater reason, therefore, why the persons to whom such works are of real importance, should aid in rewarding those who have sufficient spirit, energy, and ability to produce them.

The plates may be put together in two ways, namely, first, keeping all the illustrations of each separate building together, and, secondly, arranging them in such a manner as "to present parallel examples of the manner in which the same feature was treated by the builders of different ages." The latter is the right way to make the collection fulfil its purpose, and when so arranged, an examination of it becomes most interesting and instructive.*

Those who are conversant with architecture will know, from the dates over which the work extends, that it embraces the transition from Norman (with the semicircular arch prevailing), the early English, the transition to Decorated, and the first examples of the latter style. The illustrations begin with Fountains and Kirkstall, where we find in a Norman nave the main arches which carry the clerestory pointed, all the other arches being semicircular, and ends with the magnificent east end of Howden, displaying the crocketted gables, traceried windows, and ornamental niches of the decorated style. The gradual progress is apparent. The thick walls and shallow buttresses of the Norman builders are seen to give place to thinner inclosures, with boldly-projecting buttresses where strength is needed. Narrow lancet-headed openings at first suffice for light and appearance; then three or five are gathered together under one embracing arch, the centre opening being elongated, the better to fill up the space so circumscribed. To lighten the spandrells thus left between the high central light and the lower lights on each side, openings are made in them, and the result is a three-light window, with an approach to tracery in the head. Later in the style (the early English) geometrical forms are introduced to diversify and strengthen the heads of windows, and imperceptibly lead to the beautiful flowing tracery which distinguishes the decorated period, the chief glories of which belong to the fourteenth century.

We shall hope to see similar parallel illustrations of the buildings of this latter style and of those of the perpendicular period, with their,—

> "branching roofs
> Self-poised, and scooped into a thousand cells,
> Where light and shade repose, where music dwells
> Lingering—and wandering on as loth to die,
> Like thoughts whose very sweetness yieldeth proof
> That they were born for immortality."

Mr. Sharpe's work is at present under a disadvantage, inasmuch as it has no letter-press. At the instance of several of his professional subscribers, the author has been induced to prepare for publication in a separate form, and as a supplement to the "Parallels," the full-sized drawings of the profiles of all the mouldings contained in the work, having their subordination, and the joints of the stonework marked upon them. He hopes, with reason, that this—the first work of the kind on such a subject, will be found to be a useful adjunct to the "Parallels," although not essential to the scheme of his work, the object of which is to present a general and comprehensive view of the architecture of the twelfth and thirteenth centuries, and its regular progress, rather than to supply the architect with a stock of promiscuous detail. Still, of these details it will be found to present a very valuable collection.

With this supplement the letter-press will appear in the shape of a separate volume, containing a detailed description of the buildings illustrated, and a general review of the progress of church architecture through the twelfth and thirteenth centuries. We shall then return to a consideration of the work; and, in the meantime, offer the warmest commendation and thanks to Mr. Sharpe, for the great service he has rendered to the art by the publication of this important and beautiful work.

ON THE ANCIENT BUDDHIST ARCHITECTURE OF INDIA*.

The Dagobas, Stuphas, Chaityas, and Viharas, mentioned in the first part of my communication, are the four principal forms of Buddhist architecture, and the only ones it is necessary, or that I have time, to particularise. But I must now say a few words regarding the architectural forms and peculiarities of the buildings themselves.

First, then, with regard to the pillars. All pillars in India were originally square, and set up as such; the angles are then cut off at a certain height, so as to make them into octagons; the operation is again repeated, so as to make sixteen sides. Sometimes I have seen thirty-two introduced; but more often when this is attempted this division becomes circular, and remains so. Another peculiarity is the bracket capital, which is universal, and does not exist in any other style that I am aware of, though for trabeate architecture it is, I feel convinced, not only decoratively but constructively a great improvement in the mode adopted by the Egyptians or the abacus of the Greeks.

The entablatures are generally only repetitions of a wooden beam, serving as an archi-

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* "Architectural Parallels; or, the Progress of Ecclesiastical Architecture in England, through the Twelfth and Thirteenth Centuries, exhibited in a series of Parallel Examples, selected from various Abbey Churches." By Edmund Sharpe, M.A., Architect, Lancaster. London: John Van Voorst.

* The similarity of the general form and arrangement in buildings extending over a considerable period of time, and at the same time originality and beauty of the special differences, are very striking. The width of all the churches given, ranges between 60 feet and 70 feet: with only two or three exceptions, the extent of the transept, from north to south, is double the width of the church.

* See p. 135 *ante*.

trave; and in the caves the whole wooden construction is generally repeated.

Another peculiarity is the entire absence of an arch of construction, not only in these Buddhist, but in all Hindoo buildings down to a very late period. When first I saw their curvilinear forms, and what I could not but think were discharging arches over all the openings, I felt convinced that the knowledge of the arch must have extended to this country at a very early period; further researches, however, have convinced me that such was not the case, but that they are all copies of curvilinear-roofed wooden buildings; indeed, in the oldest caves the wood used actually remains, as at Carli, though of course used only as an ornament; and in the modern caves we have identically the same forms repeated in the rock, but so minutely copied that even the mortices, dovetails, and pins of the carpentry are minutely copied. Even in the present day, after the long experience of the arch-building Mahometans, the Hindoos never willingly use an arch, though they frequently cut the faces of their stones in the forms of arches; and in some of the oldest Mahometan buildings it is quite curious to observe, where they employed Hindoo builders, how they constructed the large pointed arches their style required on their own horizontal principles. I have seen an arch 20 feet wide and 40 feet high so built. I need scarcely add, it is now very much crippled, and most of those around it have fallen in. Had the Hindoos had their own way, they would have laid one long stone-beam across the opening, which, constructively, would have been the best form; but the Moslems required their own pointed form; and as the rude warriors would not, or could not, be their own masons, they were obliged to put up with what their conquered subjects could do for them.

Another peculiarity, the last I shall mention, is the mode in which these caves are lighted. At first I was inclined to believe it was a peculiarity of cave architecture, and arose from the necessities of that mode of making temples; but now I am convinced that it was also used in the structural originals from which they were copied. In the Chaitya caves the whole light is introduced through one great semicircular or horse-shoe opening or window immediately over the entrance. To a person approaching the cave this is partially concealed, if it was not wholly so, by an external screen, which originally supported music-galleries, and was covered by woodwork and wooden ornaments. From its exposed situation this has in every instance perished, but the mortices and holes are almost sufficient to enable us to restore it. Sometimes, I have reason to believe, the space between the inner and outer screens is at least partially roofed, so that a votary approaching and entering the temple would always stand in comparative gloom and shade, when a strong flood of light would from some unseen opening be thrown from behind and above him on the altar and the priests that served it. Even now, in their denuded and ruined state, the effect is most magical; and when all the arrangements were complete, I am convinced it must have been the most artistic mode of introducing light hitherto invented.

One of the most perfect specimens of lighting is universally acknowledged to be the Pantheon at Rome; it has the advantage, like the caves, of having only one opening, and that high enough not to catch the eye; but it admits the rain, and, besides, the light is a wandering light, sometimes resting on one altar, sometimes on another, and often on the devotee himself, which it never should do.

Owing to the difficulty of managing such large openings in our northern climate with the means they had at their command, our mediæval architects missed this invention, and dispersed their openings almost equally over their buildings. For the display of painted glass they were right,—for white light this Indian one is a far better plan.

I mentioned above that if we are to look for synonyms for Indian architecture, it must be among similar races, speaking the same language and professing the same religion—not among the Coptic Egyptians, whose system and race differ so totally from that of the people we have just now been talking about. It would take long to enter fully into this subject, but there are one or two points I would like to bring to your notice, if only to shew the direction in which I conceive such researches should extend.

The first is the similarity of our own Stonehenge to the monuments I have just been describing. That building consisted originally of an outer circle of stone, about 100 feet in diameter, encompassing an inner choir, of a horse-shoe form; between these two is a circle of smaller stones of a different character, and within the inner circle a fourth of like nature; the great circles consisting of the usual Sarsen stones of the neighbourhood; the smaller circles are of porphyry, or indurated potstone, that must have come from Cornwall or some distant locality: and it must further be remarked, that while the two great circles are perfectly symmetrical and regular, these do not seem ever to have been completed, or to be symmetrical with themselves or the monument in which they are placed.

Beyond the outer circle, in front of the principal and the western entrances, are detached stones, either alone or in pairs, too distant to be shewn here.

When I first visited this monument, after my return from India, the whole appeared to me so clear and intelligible, on the supposition of its being a Buddhist monument, that I have in my own mind no doubt whatever of the fact, though it may not appear to others so clear as it does to myself.

The outer circle I take to be just such an inclosure as surrounds the tope at Sanchee, with its gateways and stambas; the inner I take to be a Buddhist choir, like that at Carli and everywhere else in India; the intermediate circles I take to be *danams*, or *donums*—gifts or offerings to the temple; and I should mention that, not only at Sanchee but elsewhere in India, almost every pillar of the circles bears a short inscription, importing that the column or pillar is the gift of so-and-so; as Samanerasa danam—the gift of Samanera; Dhamagaliksasa mata danam—the gift of the mother of Dhamagaliksa, &c.

According to the same theory, the detached stones in the avenues and opposite the gateways not only become intelligible but necessary; indeed, there is no point about it that does not appear to me intelligible at once.

It may be asked what proof have we that Buddhism ever reached these shores; and though I cannot enter into this question now, I may mention what I believe is scarcely doubted, that the Woden of the Scandinavians is the Buddha of the Indians, from whom our Wednesday takes its name; and that the religion extended to and existed in the North, from whence the Teutonic element of our population came, and if they brought their language, it is not to be wondered at that they brought their religion also.

Had I been wishing to illustrate this point only, I could have brought forward examples much more like Stonehenge than anything I have yet alluded to, for there exist in India rude circles of large stones which present no recognisable difference from those in this country, as well as the simple but elaborate circles such as that of Amrabati, to which I have above referred—but I merely mention it incidentally, and have not, therefore, thought it worth while to get any drawings for the purpose.

The other and last point to which I will allude does not strictly belong to Buddhist but to Jaina architecture, which, however, is only corrupt Buddhism, and so similar to it in many respects, that the difference is scarcely recognisable. It is their mode of forming domes, which is always done by placing eight pillars in the angles of a regular octagon; the angles are then cut off by additional architraves, so as to make a polygon of sixteen sides. Sometimes this operation is repeated, so as to reduce it to thirty-two; but in small domes, a sixteen-sided polygon is near enough a circle for all practical purposes; and the dome is raised on this by concentric layers of stones, laid in horizontal bands, projecting beyond one another till they come to a point.

The eight pillars, however, are never allowed to stand alone, but the plan is reduced to a square by the addition of one pillar at each angle, and, generally, the figure is further extended by the addition of two or of four pillars on each face, and again of two, and so on. By this means the building obtains a central point under the dome of great magnificence, which is approached by four aisles, broader than the others in the ratio of 10 to 7, or of the square to the hypothenuse of a right angled isosceles triangle, which, as far as my experience goes, is the most pleasing proportion yet hit upon. In Gothic buildings, when the centre aisle is twice as high as the side ones, the proportion 2 to 1 is more suitable, but here they are all of the same height, and, consequently, such a proportion would be unpleasing.

You will see that the arrangement is that adopted by Sir C. Wren, in his famous interior of St. Stephen's, Walbrook; and so far as he followed accidentally this Indian type, he was successful. The defects of that beautiful building arise from his not fully appreciating the elegancies to which the plan he was using might lead. His dome is too large—the walls parallel to the colonnades—and there is a want of harmony in the design between the different parts, which has often been remarked, and certainly hurts the general effect.

It is not, however, so much to refer to this, that I have alluded to this mode of building, but to point out the similarity that exists between this style and that of a tomb at Mylassa, in Asia Minor, which must be familiar to you all from the illustrations contained in the Ionian antiquities of the Dilettanti Society. So identical is it in construction and form with these Indian buildings, that if its details—which are Greek, or rather, Roman—were so time-worn as to be undistinguishable, had I found the building on the banks of the Ganges, instead of the shores of the Mediterranean, I would have sketched it without remarking that there was anything peculiar or unusual about it.

It may, perhaps, be suggested that I am going far to look for a similarity, which, like that of St. Stephen's, Walbrook, may be accidental; but this is not the case, for Mylassa is on the borders of Lycia, and the only buildings known which at all resemble those singular hog-backed tombs brought to light by Sir Charles Fellows, are a class of buildings common in India, but not such as I could easily have collected had I known of their existence when I was in that country. Indeed, all these chaitya caves are rock-cut copies of buildings, with curvilinear wooden roofs, exactly similar to those of these tombs, and about as far removed from direct imitation of their wooden originals as these are. A curvilinear form for a wooden roof is in itself so singular, that when we find it so prevalent in this country, I think we are entitled to guess, at least, at some similarity or common origin.

But what renders this view of the matter still more probable is the fact, that Mr. Sharpe, in his admirable "Essay on the Lycian Language," in the appendix to Sir C. Fellows' work, clearly proves that the language of the inscriptions on the Lycian monuments is Zend, or, at least, a dialect of Sanscrit, not further removed from the original tongue than the Pali, in which the inscriptions on these Indian monuments is written. When the subject is more fully investigated, I have no doubt but that it will be fully proved that we have, at these two extremes of Asia, similar buildings, erected by tribes of the race who, emanating from one common centre, spread over the whole ancient world, east and west, and are now the dominant race among mankind.

It is not by a hasty assumption of primæval antiquity, and of ill-defined generalisation of styles—which have no connection except both being equally ill understood—that we can arrive at any satisfactory conclusion on this subject,—but by carefully investigating similarities, such as those I have alluded to; and when this is done, I believe it will be found that architecture may be as usefully, and as extensively used to determine the affinities of races as language, and that the history of the world is written in most legible characters in the stone and mortar of its monuments. Viewed in this light, the study of architectural antiquity rises to a dignity it has not hitherto been able to assume. J. FERGUSSON.

PHILOSOPHY OF LABOUR.—Elihu Burritt will lecture on this subject this (Friday) night at Exeter-hall.

SANITARY REMEDIES.

NATURE is the great sanitary reformer. *She* is continually ameliorating the condition of our race. Let us follow her dictates, and be free. It is not, however, so much my intention to dwell on sanitary evils as on sanitary remedies. And first, as to heating and ventilation: were these two single items adequately attended to, it would go far to alleviate a prodigious mass of discomfort and disease.

Houses are heated in most cases with open fires: occasionally by means of stoves, hot-water, or steam apparatus. I would propose, however, to substitute *ventilating* stoves or fire-places, inasmuch as they furnish us not merely with warm, but, at the same time, pure fresh air. Suppose we take a stove-grate, and arrange it so that the open air finds admission *below*, between the outside casing and the stove itself. This air thus heated escapes above, and pervades the apartment in every direction. *Thermometer*, or common valves, might be employed to regulate the draught, and the room would be both heated and ventilated, at once, by means of the open fire and heated air. In Flanders, these stove-grates sometimes combine a cooking apparatus; and it would be obviously practicable to add a hot chamber, very useful, in humble establishments, for drying or airing clothes. Arranged on the ventilating principle, stove-grates would prove invaluable in halls and passages; and while they diffused a warm, moist, genial atmosphere, would neutralize the chilling in-draught from doors and windows. In large abodes, a hot chamber surrounding a cockle or stove, could be placed in the basement story, and on the *ventilating principle*, would warm the passages throughout. It would be very possible, also, to lead tubes for hot-air direct therefrom to any given apartment. The hot chamber also, could be placed *under* the basement floor; superior, however, to the Roman hypocaust, by the introduction of pure fresh air. Hot chambers might be formed in connection with any kind of stove, from the stately porcelain of Dresden, to one of plain cast-iron. It would only need an interspace of some kind where the open air could be admitted, and when heated, let out again. A common kitchen fire would answer: hot-water and steam-pipes would also be obviously available.

Hot, foul air accumulates at the top of each apartment; all that is necessary is to let it escape. This, however is seldom done, whether in the lordly mansion or the humble hut. But foul air will not sufficiently escape unless more air supply its place. It has been already shewn how pure, fresh, warm air is to be obtained. This should gain admission into every room, over and under the door, through holes in the skirting, and even in the floor itself; as well from behind the chamber grate, if so arranged. The apertures at the ceiling may be into the chimney funnel itself, or into a collateral funnel, built up with the smoke conduit, one from each apartment, and terminating in a space beneath the roof, whence it could have proper vent through cowls, or louvres, constructed for the purpose. If the smoke funnel were preferred, the opening might be directly through the chimney-breast; but in any case it would look more sightly if led from the centre of the room, by means of a proper conduit, plaster-bedded between the joists, or in a hollow beam, or simply a tube attached beneath the ceiling. Among other advantages, the centre of the ceiling would prove most convenient for the funnel of a *ventilating lamp*; but let there be an opening, and of sufficient dimensions. An Arnott's valve, or a simple metal or porcelain tube, may be let into, or built into the chimney-breast. From 6 to 12 inches, varying with the size and uses of the apartment, would probably prove dimensions adequate for the purpose. All rooms, houses, palaces, shops, workshops, schools, factories, gaols, churches, should be adequately warmed, and ventilated,—in winter, by means of ventilating-stoves and foul air ducts; in summer, by free admission, night and day (due precautions being taken), of the uncontaminated open air.

It is just as necessary and desirable to light a house well as to heat and ventilate it. Animals of every description, human beings more especially, become at once deformed and diseased when long withdrawn from the vivifying influence of light. Government, in place of taxing windows, should, if anything, tax the absence of them. Houses should be so constructed as to let the light fall freely on, and permeate them in every direction.

Every human dwelling should be well provided with pure soft water, both hot and cold. In every sleeping-room there should be a bath, with the proper facilities for laying on and letting off the water. The hot-water tank might be beside the kitchen fire. If the walls of the tank were made double, and the interstices well stuffed with some non-conducting material, as pounded breeze or charcoal, the heat might be kept up both night and day. A tank might be indifferently constructed of wood, metal, slate, stone. A small steam-boiler built into one side the kitchen fire would quickly impart the requisite warmth. The water might be pumped up when needed, or otherwise laid on; in all cases, however, employing *packed* tubes for conveying it. I do not see why we should not obtain hot water from Artesian wells, not forgetting to employ packed tubes here also. The Artesian well at the Grenelle, in Paris, must lose a vast deal of its caloric from the absence of this precaution. It would prove, in my opinion, a good speculation were water companies to supply towns with hot water as well as cold. There is indeed no reason why the earth should not supply us with water hot as well as cold, any more, perhaps, than why mechanical attrition or compressed air should not keep us warm, the electric fluid light our streets and houses, convey our messages, set our clocks going, and possibly, also, perform some of our hard work.

But we must get rid of human excretions. Every dwelling should have the utmost facilities for purity and cleanliness. If water-closets be not sufficiently detached and ventilated, they poison the air of the habitations to which they are attached. A syphon valve appears to me to be much the best; and it would be desirable there should be a drip of solution of sulphate of iron, or chlorine and soda, or lime, by which stench would be cheaply and efficiently allayed. Water-closet pipes should be packed so as to guard against the frost. House-drains of glass, porcelain, or galvanised iron, should conduct into the main sewer, of similar materials and arrangement, only larger pipes—say 4 inches for the house-drains, and 12 for the street. It is most undesirable that feculence should find admittance into an *open* sewer; disastrous consequences must follow. *Close* street-drains should deliver their contents into fire-brick reservoirs, based on concrete and bonded in asphalte. Gutta-percha tubes and couplings would permit the contents to be pumped out, and chlorine or copperas in solution thrown in. On the banks of rivers boats could be employed to convey the refuse; elsewhere tumbrils.

There should be culverts or tunnels under every thoroughfare constructed of brickwork laid in asphalte, and based on concrete. They should have a flagged way on one or both sides, and be lofty enough to permit a man to pass. These culverts would occupy little more space than what is required for the present absurd and filthy sewer; and would suffice to convey not only sullage, but gas and water pipes. Durable in construction, they would cost little for repairs; and electric-telegraph, gas, and water, companies would probably pay handsomely for their use. The rain-water might be conveyed in a granite gutter six inches deep, at the base of the culvert; as for the drain and water pipes, they could be laid on suitable supports, stone, or metal. When such culverts were connected with rivers, as the Thames, liable to rise of tide, proper valves would guard against the intrusion of the waters.

Streets, lanes, alleys, courts, should be daily swept, and the filth at once removed: wire-web gratings, placed in syphon valves, would prevent the refuse gaining admission into the rain conduits. Roadways, streets, should be laid with lines of granite curb, say a foot over, and ten feet long, of which the four sides should be made to turn up in succession; the whole on a good thick bed of concrete. I would have a pair of these granite ways, one on each side of the street or road; the interspaces being of coarse gravel, laid in asphalte. Such an arrangement would probably last as long as the Appian way itself. It would be really cheap of construction considering its durability, the easy traction it would afford, the comparative exemption from dust, and saving of horse-power; advantages to which roads laid down on the system of McAdam cannot for a moment lay claim.

Human abodes should be invariably placed above the level of the soil; in Genoa and other Italian towns, many people it is said, will not consent to live on the ground-floor. At any rate, all direct communication should be cut off by asphalte or plaster of Paris on a concrete base. Houses, even the meanest, could be readily isolated, either at the time of their construction or afterwards. It is wrong to lay the joists of houses, were it the very poorest, directly over the soil, thus affording immediate admission to damp, stench, vermin. When asphalte ground-floors are employed, it will be requisite to place a flag at the fire-place. Asphalte is vastly better, at least in these cold regions, than stone, in basement floors. Our chill, and sometimes damp walls also, were better if covered with panelling, rendered fire proof, than left naked or decked with paper hangings, mere shreds.

Interments, whether in or out of towns, unless some fifteen feet deep, should be prohibited. I do not think public feeling in these countries would sanction casting the dead into pits, one for every day in the year, as practised at Naples, any more than raising a pyramid of human remains, or casting them into the sea. Any of these, however, would be far preferable to the present mode of burial. The sacred relics of humanity would no longer incur exposure, nor would the necessary processes of decomposition come into revolting proximity with animated existence. The whole difficulty in this important matter may, I conceive, be got rid of, by abandoning, at once and for ever, the practice of *superficial* interment. The Egyptians knew the secret some four thousand years ago, and we still con the lesson they have taught us in vain. In a word, I would construct receptacles of suitably large dimensions, covered or uncovered, in the soil, and lay the dead by thousands or tens of thousands in cavities, covering up each layer with fluid asphalte. These cities of the dead should be accessible to the public; they might be adorned with Doric columns; if underground, lighted and ventilated, with separate mausolea for those who wished it and chose to pay. As for the poor, they should be buried gratuitously. I can see no possible objection to this arrangement; it invades no religious or social prejudice; it secures the desired objects in the fullest sense of the words, while every rite that can bring comfort to the hearts of afflicted survivors could be fully attended to. Deserted quarries, as has, indeed, been done in Liverpool, might be rendered available; abandoned mines, also desert-tracks and mountain slopes. Dartmoor, Lancashire, or Cornwall, thanks to railways, would be readily accessible from London say, and the remains might be nightly or daily forwarded from any town, large or small, to their respective destinations. It might be for the railway interest to stir in this business; and it would certainly be for the interests of every one, that the present revolting, unhealthy, insufficient, and scandalous modes of interment were wholly discontinued.

Cholera, plague, fever, after all, are species of poisoning, almost if not entirely as much within human control, as poisoning by arsenic or corrosive sublimate. Preventive measures are just as efficient in one case as in the other. If the opinion of one who has paid this subject long and anxious consideration be of any weight, I would utter it as my most sincere conviction that the above-named diseases would have no power whatever over a community whose sanitary welfare was even tolerably provided for. The rich will look to themselves, but the poor and ignorant must be minded; they neither know nor care to look to themselves. Their dwellings should be entirely reconstructed: they are every where, at least as regards these kingdoms, a disgrace to civilization—nay, to common decency. I can speak from experience. I have been in the huts of the Africans, of the American Indians; I never saw the filth, the desolating, appalling, wretchedness that I have over and over witnessed in England, Ireland, Scotland. It would be a glorious aim for the noble profession of

architecture, to devise dwellings such as the working man *ought* to inhabit. The Legislature, public bodies, should provide places of healthy, innocent recreation, good for both soul and body, and accessible to the whole population; gratuitous baths, wash-houses, libraries, museums, parks, reading-rooms, gymnasia, concert-rooms — places, in short, where harmless, inexpensive, recreation might successfully enter the lists with debauchery and vice. God knows they would be better, cheaper, more efficient than jails, penitentiaries, panopticons, and patent drops; which, indeed, they would in time replace. Sanitary and moral reforms go together; and as a healthy, cheerful, well-lighted, well-regulated, abode is found cheaper and better, more conducive to health and happiness than one that reeks with dirt, disease, and immorality; so reading-rooms, museums, parks, and picture galleries would be found civilizers, cheaper and better than the silent cell, the gallows, and the scourge. H. M'CORMAC, M.D.

Belfast, March 5, 1848.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A MEETING was held on the 20th instant; when Mr. Eaton Hodgkinson was elected honorary member, and Mr. Thomas Penson and Mr. Edmund Sharpe, M.A., fellows. The honorary secretary announced the following as the subjects proposed for the medals:—

Her Majesty having been pleased to grant her gracious permission for the Royal Medal to be conferred on such distinguished architect or man of science, of any country, as may have designed or executed any building of high merit, or produced a work tending to promote or facilitate the knowledge of architecture, or the various branches of science connected therewith, the Council will in January, 1849, proceed to award the Royal Gold Medal to the *author of some literary publication connected with architecture*.

The silver medals of the Institute will be awarded—

1. To the best essay on the peculiar characteristics of the Palladian school of architecture, and a comparison and contrast of its elementary principles and details with those of ancient art.

2. On the best manner of covering the roofs and forming the flats and gutters of buildings; the nature of the several materials used in various parts of the country for these purposes; their most effectual and economical application; the inclination to be given to the different parts, and the other practical precautions to be adopted to prevent snow and rain from penetrating into the building.

"The Soane Medallion" to the best design for a building to serve as a national repository and museum for the illustration and exhibition of the productions of the industrial arts.

The successful competitor for this medal, if he go abroad, will be entitled to the sum of 50*l.* at the end of one year's absence, on sending satisfactory evidence of his progress and his studies.

Amongst the books presented were an essay, on "Cyclopean Walls" (*Kyklopischen Mauern.*) by Dr. Forchammer; parts of M. Daly's "*Révue Générale de l'Architecture*," and of Mr. Fergusson's beautiful work on Indian architecture. The foreign secretary, in commenting on the donations, pointed attention to an article in the *Révue Générale*, complimentary to the Institute for not restricting the competition for the gold medal to this kingdom.

Allusion was made to the circumstance that all the impressions of Mr. Leitch's translation of Müller's "Ancient Art and its remains," (of which a copy was presented to the Institute at the last meeting), had been destroyed by fire.

Amongst the letters read, was one from Herr Lange, of Fülda, acknowledging the honour of his election, and setting forth several subjects on which he could afford information, especially the Carlovingian monuments (eighth and ninth century), of his neighbourhood, and a collection of terms in use amongst the workmen of the middle ages.

Mr. T. H. Wyatt then read a paper on the "History, Present Condition, and Proposed Restoration of Llandaff Cathedral," to which we shall refer hereafter.

In the course of a conversation which ensued, Mr. Donaldson objected to the appellation of "Early English," to the style it was used to signify, and thought the "dog-tooth" moulding should have a less absurd designation.—Mr. Chantrell was disposed to attribute the origin of this moulding to the plant *Gallium Cruciatum*.—Another member said the *botanical* was better than the *canine* origin, at all events, but neither was the right,—in which we fully agree.

THE ART-UNION OF LONDON AND THE BOARD OF TRADE.

WE have now before us, in a printed form, the whole of the correspondence between Mr. John Lefevre, on the part of the Lords of the Privy Council appointed for matters relating to trade, and Mr. Godwin, for the Council of the Art Union of London, relative to the mischievous interference of that board, who, in ignorantly risking the disorganization of this most important institution, are drawing upon themselves a responsibility of no trifling character. We have already laid before our readers the gist of the arguments on either side,* and shewn the invalidity of the right the board claim, and the evil of what they require, even if they had the right to do so.

Since then, their lordships, finding that the council would not propose any steps which they conscientiously believed would be injurious, have issued the following general regulations, to apply to a number of bodies (not recognising the difference made between them by the charter already granted to the Art-Union of London) and two additional "Bye-laws," as they please to term them, applying specially to the latter body:—

"REGULATION I.—That from and after the time named for this regulation to come into force, the selection, in the first instance, of works of art, to be afterwards distributed as prizes, shall be intrusted in each Art-Union to a committee, constituted in such manner as shall be decided on by the subscribers in each case.

II.—It is left to each Art-Union to decide for itself in what manner the works of art so selected by the committee shall be afterwards distributed among the prizeholders. The mode adopted is, however, in each, to be subject to the approval of the Board of Trade.

III.—The Committee of Selection, or other body intrusted with the office, is not to be required to choose the works of art from any particular gallery or exhibition.

IV.—The above regulations are not to be binding upon any Art-Union until the distribution of prizes for the year 1848 has taken place, and they are not to apply to that distribution.

V.—Any Art-Union desiring to effect gradual changes in its system or constitution, in order to bring it into harmony with that prescribed in these regulations, is at liberty to present a plan for that purpose to this board, and this board will, if it approve the plan, suspend the regulations as regards such Art-Union for a period of three or four years, as may be necessary.

VI.—Should the special circumstances of any Art-Union to which these rules are applicable render a modification of them expedient, my Lords will take the case of such Union into consideration on a proper representation being made.

VII.—This board does not, by issuing these regulations, waive its right of making such further rules as it may at any time think proper with respect to any of the Art-Unions to which these regulations apply."

These are the Bye-Laws:—

"I.—In the annual distribution of prizes for years 1849, 1850, and 1851 respectively, a certain proportion of the prizes distributed shall consist of pictures, drawings, sculpture, or other works of art, previously selected by a committee, appointed in such manner as a general meeting of the members of the society shall decide, or, in default of such appointment, by the council for the time being, or a committee thereof; and in the distribution for the year 1852, and in all subsequent distributions, the whole of the prizes distributed shall consist of works previously selected in manner aforesaid.

II.—The proportion of prizes to be previously selected in the years 1849, 1850, and 1851, and the mode of distributing the prizes so selected in those or any subsequent years, shall be decided by a general meeting of the members of the society, to be holden at least three months before the annual distribution for the year 1849, subject to the approval of the Board of Trade, or of any other Committee of the Privy Council to which the consideration of Art-Unions may at any time be referred."

Throughout the correspondence the council have very properly refused assent to the assumed right of the board to alter the constitution of the association. The Act of Parliament expressly refers to Art-Unions conducted on two recognised different principles, and legalises *both*. According to the Act of Parliament, a duly chartered Art-Union which distributes by lot to the members certain sums of money is legal, as well as one which distributes the works of art themselves, provided *only* that the money be expended in the purchase of works of art, and the society be carried on in good faith for the encouragement of the fine arts. Whereas the effect of the regulations ordered by their lordships is, in contravention of this, to declare that only *one description* of Art-Union shall be legal, a power which the council consider it their duty to deny. The necessity for this course is the greater, because of the intimation of *constant* interference on the part of their lordships conveyed in their last communication,—an interference which must have the effect of annoying and discouraging those by whom the association is conducted, and will tend unquestionably to its ultimate extinction. Mr. Lefevre, in his last letter, says:—"The functions which have been assigned to their lordships by her Majesty, under the Act of Parliament relating to Art-Unions, render it imperative upon them to *decide upon the principles* on which such societies should be conducted, in order to entitle them to the protection of the Legislature." This we entirely deny. The *only* function given to the board by the Act, in the case of a chartered body, is that of certifying to her Majesty any perversion of such an association from the purposes of the Act. Their lordships have nothing whatever to do with principles,—the Legislature has itself decided these.

Apart from the question of right, the council have set forth in their letters the reasons for objecting most strenuously to the alterations to the requirement of which the board at present confine themselves.

That each prizeholder should have the right of selecting for himself a work of art from the public exhibition was the fundamental law of the association when first established,—it being considered the most likely to induce large numbers of persons to join the association, and thus to become interested in the arts,—as tending to induce the largest expenditure on works of art,—as best calculated to lead to the education of the public in art, to prevent the influence of favouritism or individual bias in favour of particular classes of art to the injury of others, and in all respects to advance with the most certainty the great objects of the Art-Union of London.

The experience of eleven years has convinced them of the correctness of these views. The objections to this principle (small as opposed to its advantages) are becoming, as was to be expected, less every day, and by the time when, according to the orders of the board, all the prizes are to be selected by a Committee, will for the most part have disappeared.

The council have shewn in their communications to their lordships the great difficulties attending a selection by a committee,—the length of time that would be occupied to obtain the large number of works of art required,—which extra devotion could scarcely be looked for from an unpaid committee,—also the certain dissatisfaction it would give to prizeholders, the consequent decrease of subscribers, and the gradual decay of the association. We hope the council will yet succeed in making the evils of the desired change apparent to the Board of Trade, and that the latter will not persist in a course calculated to destroy an important educational institution. Artists should themselves take steps to strengthen the hands of the council, and aid in preventing what, if it occurred, they would have bitter cause to deplore.

* See p. 109 *ante*.

THE "GREAT BRITAIN."—At the meeting of the *Great Western* Steam-ship Company, at Bristol, last week, the expense attending the recovery of the *Great Britain* was stated to amount, after deducting proceeds of the materials, to 12,670*l.* 14s. 1d. The estimates for restoring her to the condition she was in previously to her stranding, were, for hull, masts, sails, cabins, boats, anchors, cables, &c., 15,886*l.* 5s.; machinery, 5,808*l.*; total, 21,694*l.* 5s.

ST. PAUL'S CATHEDRAL, CALCUTTA.

FREEMASONS OF THE CHURCH.

MARCH 14. Mr. French in the chair.—Mr. W. H. Rogers exhibited a drawing of an ancient crucifix in Lord Hastings' collection, with his lordship's permission, and directed the attention of members to it, on the ground of its peculiar decoration. The hon. secretary laid upon the table a German work containing 144 ornamental designs (*Kleines Ornamentenbuch*). Each plate has several suggestive designs of value to the carver, jeweller, &c.

Mr. J. W. Archer then read "A Memorial of the Chapel of the family of Cotton, at Lanwade, in Cambridgeshire," which embraced a detailed description of the monuments it contains, the manor-house, &c.

Mr. Stothard, with permission of the Rev. D. Wilson, M.A., Vicar of Islington, and son of the Bishop of Calcutta, submitted the following particulars of the rise and progress of St. Paul's Cathedral, Calcutta.

The site comprises seven acres, and was presented by the Hon. East India Company, in addition to a grant of 15,000*l.* towards the erection of the building. The estimated cost of the whole of the cathedral was 40,000*l.*, and the outlay has been about 50,000*l.* The bishop and his committee experienced great difficulty, owing to the distance of Calcutta from England, in obtaining the services of an experienced architect. The Governor-General of India calculated the probable expense attendant upon having an architect would be 14,400*l.* (?) presuming that his services would be wholly required for eight years. Their limited funds appeared an insuperable barrier to their progress, until Lieut.-Colonel Forbes, of the Bengal Engineers, who has acted as architect to all the principal buildings in Calcutta during the last twenty-five years (among which may be named the Mint), offered his services gratuitously, which were accepted, and he has been engaged in superintending the construction of the cathedral for eight years.

The style of architecture selected for the cathedral is Perpendicular, with several modifications to suit the climate. The tower and spire are after Norwich Cathedral, with improvements suggested by that of Canterbury, while most of the details, external and internal, are from York Minster. The building has been constructed with bricks of a peculiar kind, specially prepared for the purpose, and with dressings of Chunar stone, and well covered, inside and outside, with chunam, which takes a polish like marble. The limited means at the command of the committee would not allow of the entire use of stone.

The extreme length of the cathedral, including the buttresses, is 248 feet, the width 83 feet, and the height of the spire 206 feet. The funds precluded the possibility of a regular nave, consequently a western vestibule occupies its place, being 36 feet by 22 feet. The entrance by the western carriageway is 61 feet by 21 feet, and 15 feet high, over which is a library of the same dimensions and 35 feet high. There is a staircase in the western entrance leading to the western vestibule, in which are steps to the tower and library. Inside the building, under the lantern, a view is obtained of the entire length of the choir, 140 feet, with its east window; also the north and south transepts, each being 44 feet by 28 feet. In the north transept is placed the font, which is 8 feet 6 inches square. The view towards the west from under the lantern extends 100 feet (including the vestibule and covered carriage entrance), and displays the great west window. The choir is 127 feet by 61 feet, covered with an iron trussed roof 47 feet high. The chancel is 20 feet by 40 feet; which, with the middle aisle, is to be paved with the finest Italian marble. The choir will ultimately seat 1,000 persons, the stalls and pews about 400, the middle aisle about 100, the space between the altar and the pews about 200. It is proposed to remove the covered entrance and western vestibule, and add a nave to the building 150 feet by 61 feet.

The subject of the stained and painted glass in the large east window is the Crucifixion, painted by the late Sir B. West, P.R.A, and originally designed for St. George's Chapel, Windsor, in 1787; it cost 4,000*l.*, and was presented by the Queen.

The beautiful colossal statue of the late Bishop Heber, by Chantrey, has been placed in the north transept; it formerly stood in the open entrance of the old cathedral, where it was exposed to injury from the weather.

The following is a detailed account of some of the expenditure, viz.:—The cathedral, 39,894*l.*; the pulpit, communion-table, pews, stalls, chairs, and general internal fittings, 2,289*l.*; the clock, by Vulliamy, cost 675*l.* 10s.; five bells, 448*l.*; bell-frame, 231*l.* 18s. 3d.; great windows in the towers cost 971*l.* 17s.; organ, 1,500*l.*; the freight, package, and insurance of clock, bells, windows, and organ, cost 397*l.* 10s.

The whole edifice is not larger than many parish churches in this country, such as Saffron Waldron, Halifax, Southwell, and Manchester. In the Bodleian Library may be seen an alabaster model of the cathedral, executed in Italy, 5 feet long and 2 feet high; this was given to the University of Oxford by the Bishop. Although the building does not claim any pretensions to architectural proportions, and perhaps not to many strict architectural decorations, still in point of construction it may be creditable, especially as there were several difficulties to encounter: one of these existed with regard to the nature of the soil. One season was allowed for the works to settle before the roofs were put on; the settlement of the whole building during that period was 16 inches, which, it is said, was previously calculated upon by Colonel Forbes.*

It was announced that the Court of Common Council, upon the motion of Alderman Thompson, has ordered 20*l.* to be paid upon the completion of St. John's Gate.

* It seems distressing that 50,000*l.* should be spent upon a building, and that the utmost its friends can say of it is, that "in point of construction it may be creditable."

THE IMPROVEMENT OF GREAT GRIMSBY.

GREAT GRIMSBY, which was an important port in Saxon times, dates its privileges as a municipality and a Parliamentary borough from the mediæval ages, and which but for those privileges would long since have sunk into a mere fishing village, under the fostering assistance of a railway company, promises to become a great commercial city.

Nearer to the sea by some three hours in the day time and fair weather, by at least twelve hours at nightfall or in adverse winds, than the prosperous and limited docks and port of Hull, Grimsby, perfectly protected from bad weather, is about to be endowed with dock and warehouse accommodation on a large scale, and to become the terminus of railways, which will render transit to all parts of the kingdom easy and economical, thus breaking down the barrier and isolation which destroyed Great Grimsby's early greatness. The East Lincolnshire, and its parent trunk, the Great Northern, passing through Boston to Peterborough, will open up the choice of routes to the metropolis by the Eastern Counties or the London and North Western, while the Manchester, Sheffield, and Lincolnshire, with the assistance of the Midland, will, in less than twelve months, open out the way to Leeds and the clothing district—to Sheffield and the hardware district—to Manchester and the cotton district. Within two years, to receive the traffic of these lines, a dock of 32 acres will be completed, in addition to a dock of 17 acres, now existing and in full employment. Thus, for the first time, Lincolnshire, the most productive agricultural county in Britain, will be provided with a perfect system of communication to all parts of England and Scotland, and with a sea-port of the first class, capable of accommodating 1,200 vessels.

With such elements of future progress it happens that this ancient borough offers almost a clear field for improvement. A stone church, sadly patched and mangled with stucco and joiner's Gothic, is the only solid witness of Grimsby's departed grandeur. The town is composed of a few streets of brick houses, which a Brassey or a Peto would undertake to clear away in four and twenty hours.

The propriety of preparing for a rapid increase of wealth and population, with plans worthy of the age, was fairly touched upon by some of the speakers at an entertainment given by the mayor and corporation on the 1st inst., to celebrate the opening of the first railways into Grimsby.

Mr. John Fowler, engineer of the Sheffield and Lincolnshire, in the course of his speech, observed that, having now by the railways, the partial opening of which they were engaged in celebrating, and by the docks planned by Mr. Rendel, and rapidly advancing to completion under the care of Mr. Adam Smith, demonstrated the near approach of the greatness of Great Grimsby, he trusted that the inhabitants and the corporation would prepare to take advantage of the prosperity in store for them. That looking forward to the time when Grimsby would be the principal port of the Humber, and of those districts with which the railways that day opened would put them in close connection, and as such port, the site of a populous and important town—that they would lose no time in preparing, under the advice of competent parties, a large and comprehensive plan, for a new town, for spacious streets, for public buildings, for promenades; above all, for a complete system of sewerage and drainage. He did not recommend them to rush into any wild speculations, or unnecessary expenses, but to let every local alteration, addition, or professed improvement be carefully considered, with a view to the future, as well as the present, before it was undertaken.

Mr. S. Sidney, in the same strain, said that Grimsby, like *Dogberry*, had greatness thrust upon it; its true friends would desire to see it prepare to act in a manner accordant with its newly-acquired dignities. It fortunately happened that, without seeking foreign assistance, without danger of debt or taxation, the inhabitants of Grimsby had within their own power at once the machinery and the means for effecting local improvements. Right into the heart of the town, flanking on either hand the future and present docks, lay two tracks of land, amounting, as he had been informed, to 400 acres, the property of the corporation, at present merely pasture, but destined soon after the entire opening of the railways and the completion of the docks, to become building land of valuable description. For thirty-four acres of this land, the railway company had lately been adjudged to pay at the rate of 500*l.* an acre. An income of 5 per cent. on the whole property, at that value, would alone give a princely revenue towards valuable, healthful, and beautiful improvements; and then to distribute this, Great Grimsby had the advantage of municipal institutions, granted centuries ago, when one of the chief ports of the kingdom.

TREATMENT OF ARCHITECTS.

SOUTH STONEHAM UNION COMPETITION.

SIR,—I inclose you a letter received this morning, and my answer to it.—Yours, &c.
March 18. × ×

Southampton, 17th March, 1848.

SIR,—Your plan for the proposed new workhouse for the South Stoneham Union not having been accepted by the board of guardians, you will have the goodness to inform me the mode of conveyance by which you would wish the plan returned to you, and at the same time *inclose postage stamps to the amount of* 1*s. for porterage*.—I am, &c.
ALEX F. PATTERSON.

SIR,—I beg to acknowledge the receipt of your letter, which I have forwarded to the editor of THE BUILDER newspaper. Common *civility* would certainly require that, after taking the trouble and going to the expense of preparing a design for your approval, you should return the plans free of expense, without making a *profit* on the porterage from the railway station, and also should thank the architects for their trouble.—I am, &c.
× ×

A. F. Patterson, Esq., Solicitor.

AIR-TIGHT DRAIN FLAP.—Mr. Doulton has registered a design for an air-tight drain-trap in glazed stone ware, which has the advantage of not permitting corrosion. It consists simply of a flap, ground quite flat and smooth, suspended at the end of a drain-pipe, which is furnished with an inclined flange, so that when the trap is not in action the valve rests upon its seat, and should be perfectly air tight.

ORNAMENTATION FROM NATURAL TYPES.

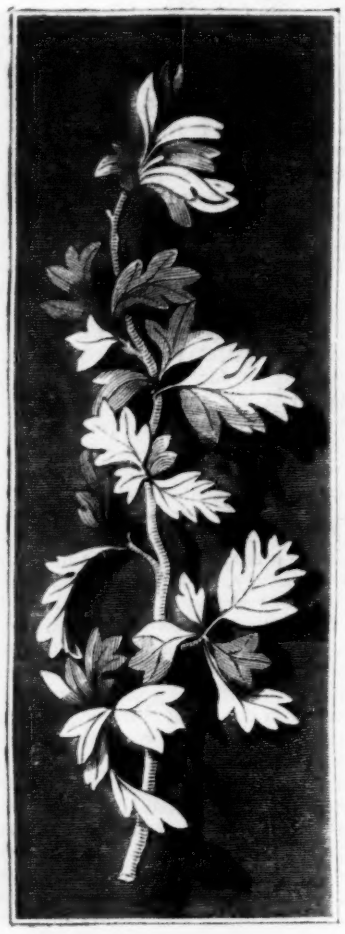


Fig. 1.—From Nature.

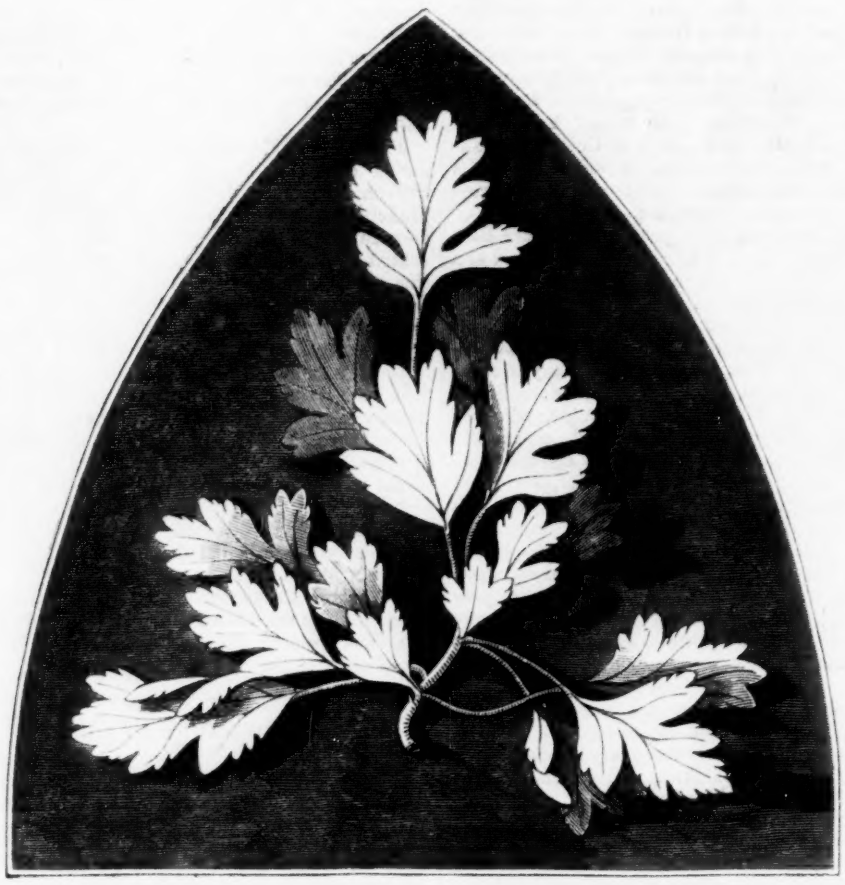


Fig. 2.—From Nature.

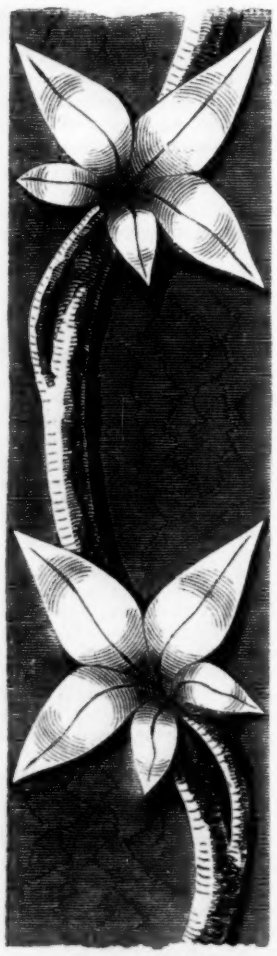


Fig. 3.—From a Door-jamb in Notre Dame de l'Epigne, France.

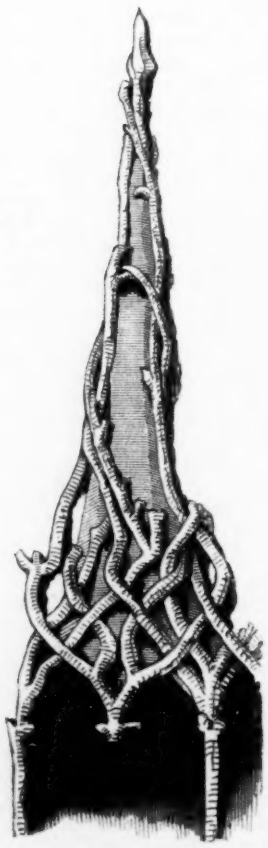


Fig. 4.—Stone Canopy in Worms Cathedral.

Fig. 5.—From Monument in Cathedral of St. Omer.

ORNAMENTATION FROM NATURAL TYPES.

Fig. 6.—Crocket, South Transept, Beauvais Cathedral.

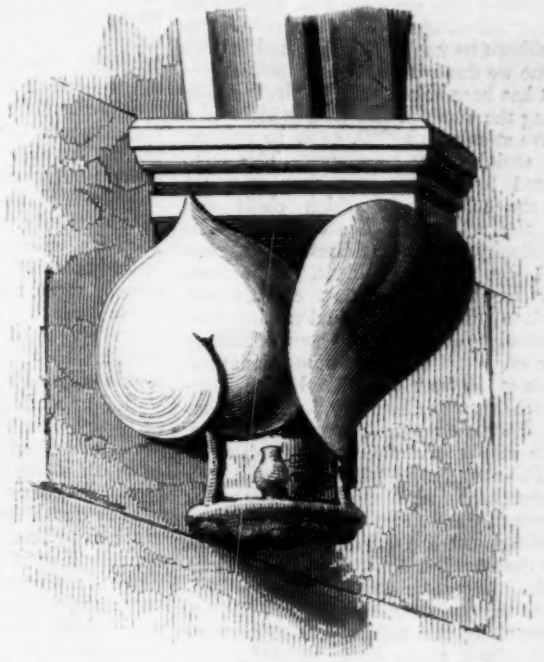


Fig. 7.—Corbel, Notre Dame de l'Epigne.

ORNAMENTATION FROM NATURAL TYPES.

We have on several occasions urged the advantage to ornamentists of recourse to nature for beautiful examples; in her abundant storehouse are to be found the types of all that, in a conventional form, we are in the habit of copying from previous works. *Natural objects geometrically disposed* might be made to produce for us a system of ornamentation copious, original, and beautiful.

At hazard, we have taken from a hedge-row two slips of the common hawthorn. Depicted in figures 1 and 2,—what a graceful element for ornamental combination it is seen to present.

It was from nature that the mediæval artists obtained their abundant variety, and they often went back to the pure source for fresh inspiration. The following examples from our sketch-book will illustrate the fact.

Fig. 3 is from the jamb of the south-transept doorway, in the church of Notre Dame de l'Epigne, near Chalons-sur-Marne, France. This edifice, we may mention, is a fine example of a large flamboyant church: the western front is very elaborate—the carving particularly beautiful. As is generally the case throughout France, the mouldings are very few compared with English examples, and consist for the most part of wreaths of foliage and ornaments, copied closely from nature.

Fig. 7 is a corbel, from the same church, wherein the leaf of the water-lily is used.

Fig. 4 is part of a canopy of stone over a monument, in Worms cathedral: it is copied from rustic woodwork.

Fig. 5 is from a mural monument in the south transept of the cathedral of St. Omer, France. It is painted and gilt, as are most of the monuments in this cathedral.

Fig. 6 is a crocket from the doorway in the south transept of Beauvais Cathedral: the portal generally has elaborate flamboyant decorations. The transepts (which are later than other parts of the cathedral) were commenced in 1500, by the architects, "Jean Waast" and "Martin Cambiches," and finished in 1555.

Exhibition of Art-Manufactures.—The exhibition of recent British manufactures at the Society of Arts, Adelphi, may be visited by tickets, which are obtainable, free, from any member, and at several places advertised. It will remain open till the 29th of next month.

NOTES IN THE PROVINCES.

The restoration of Dunstable Church, Beds, at an estimated cost of 6,200*l.*, on plans prepared by Mr. G. Somers Clarke, Architect, has been resolved on, and a committee appointed to appeal to the public for the necessary funds, under the patronage of the Duke of Bedford, the Bishop of the diocese, &c.——'A magistrate' explains, in the *Bedford Times*, that of the seven plans submitted to Colonel Jebb, the Government surveyor, for the improvement of the County gaol, and of the three selected from these, it had been found, that although Messrs. Wing and Jackson's was the one appointed for the premium, and was to cost only about 14,000*l.*, not more than 114 of the 150 cells provided for on that plan could be carried out on the separate system, whereas Mr. Smith's plan, with 154 cells, and to cost about 18,000*l.*, would not cost more than Messrs. Wing and Jackson's when altered or enlarged to an equal extent, and was otherwise preferred by Colonel Jebb and the magistrates, and that therefore Mr. Smith's plan had been decided on by the adjourned sessions without rescinding the vote as to the premium, and that the only question now remaining was, whether the selected plan should be at once adopted, or an entirely new gaol erected on a new site.——A site of 80 acres, in the parish of South Weald, for the Essex County Lunatic Asylum, has been purchased, at a cost of 8,000*l.*——A commodious assembly room is to be erected at St. Ives, at the expense of Mr. G. G. Day, on a guarantee of rent by a number of the inhabitants.——A Mariners' chapel and school is to be erected at Gloucester, so soon as subscriptions to a reasonable extent have been accumulated.——A fire, originating in a stove, near some pews, in Rock Ferry Church, Cheshire, lately broke out, destroying pews and injuring the property, besides blackening the walls and roof, before it was extinguished.——A Church, in the decorated Gothic style, with a lofty tower and spire, has been erected by the Unitarians at Gee Cross, Lancashire. The organ is to be placed on a carved oak screen, and the windows are to be filled with stained glass.——At Bradford, 500*l.* each have been contributed by a gentleman connected with the parish, towards the erection of two churches, with 2,500*l.* each, towards their endowment. The plans of one of them have been prepared.——The Snetzler organ in Beverley Minster has been re-opened with extensive additions by Messrs. Forster and Andrews. The red cloth complained of by a correspondent in The Builder has been removed.——St. Cuthbert's Church, Bensham, parish of Gateshead, was consecrated on 16th instant. The style is that of the latter part of twelfth century, designed by Mr. Dobson, architect, with a tower and spire. The body of the church is 92 feet; chancel, 22; height of edifice, 110; sittings, 600, one half free. Mr. Adamson, of Whickham was the builder, Mr. Dunn, of Gateshead, the carpenter, and Mr. Notman, of Newcastle, the upholsterer. The cost was about 2,000*l.*——Messrs. Scott, of Carlisle, have put up a stained-glass east window in the chancel of the new church at Aspatria, contributed chiefly by Mrs. Thompson, of Rose Castle, Mr. Clennel, of Brayton, the Rev. A. Salkeld, &c.——The foundation-stone of a new castle has been laid by Lady Londonderry, "with her own fair hand," on her maternal estate, in the county of Antrim, Ireland.

RAILWAY JOTTINGS.

A railway signal for passenger-carriages was registered in January last, by Mr. T. Edwards, of Cambridge, who has submitted the design of it to our inspection. It consists mainly of a red lamp, visible at night both in rear and in van, inserted into a red board for day signal, and affixed to a vertical rod which elevates it out of a box, below the level of the carriage roof, when actuated from within the several compartments of the carriage by aid of a friction pulley and cord, slide-rod and tube, secured to the roof-interior. A spring catch with a handle outside arrests the signal-rod when raised, and keeps it up until the handle is pulled back, when it falls into its place, with the lamp and board within the protecting-box. The *modus operandi* may be original, but the idea is by no means new; and however ingenious such signals may be, they are all defective unless some mode of personal access to the carriage be prepared for the guard, who *must* really be allowed to judge of the propriety of stopping a train, by something else than by the mere popping up of any signal, however skilfully invented, or however easily worked by every old woman of nervish temperament shut up in a railway carriage. As an adjunct, however, to the simple mode of converting a series of foot-boards, or a way

opened through the series of carriages, into a beat for the proper watchmen of the train—a mode which has stood the test of all possible or actual circumstances, foreseen or unforeseen, such as those which have occurred or been suggested ever since we first insisted on its general advantages—Mr. Edward's signal would perhaps be unobjectionable, and in this light alone we think it worthy of notice.——A patent has been taken out by Mr. Newton, for casting the whole of the iron wheels of a locomotive at once in a chill, so as to prevent unequal shrinking and fracture. This is to be effected by casting in a circular metal mould, the coldness of which chills and hardens the whole surface equally. The same difficulty, if we recollect right, was proposed, by a correspondent, to be overcome by help of an air blast on the red-hot metal, to *prevent* the unequal cooling.——An importation of nearly 400 bars of railway iron (one of several similar importations) has lately been made from the United States.——The Wye-bridge at Chepstow, on the Monmouth and Gloucester line, is to be of wood, and of the height of 50 feet from high water mark. The contract is taken, it is said, by a Bristol merchant, who has the frameworks already in a forward state. Mr. Robert Sharpe is proceeding with the embankment.——The strike of the stone-masons employed at Ashton, on the Manchester and Huddersfield, still continues, the reduction of 4d. and 6d. per day proposed by the company, who are their own contractors, being firmly resisted.——A large portion of another extensive viaduct has fallen—viz., one in course of erection at Fareham, on the Portsmouth branch of the South-Western line.——Another landslip, too, has occurred on the Edinburgh and Glasgow line, at the northern end of the viaduct across the Almond, and below the line, which is not one of those only now being tested for the first time by the destructive agencies of winter, as so many others have been, but a line now for six years consolidated and established.

SCOTCH CHURCH AND SCHOOLS, LITTLE RUSSELL STREET.

FEW of the thronging hundreds who constantly pass down Little Russell-street, Covent Garden, have seen the National Scotch Church in Crown-court, although it stands within a few feet of them. Until 1841, it presented nothing more than a brick wall with holes in it, but in that year Mr. R. Wallace, with *cement* and considerable skill, gave it a Norman façade, bringing the staircases outside, and making of them effective features. The church then occupied a site of 60 ft. by 30 ft. Recently very considerable additions have been made under the able direction of Mr. Roberts,—the length has been extended from 60 ft. to 90 ft., the same character being preserved, the timbers of the roof thrown open, and much additional accommodation provided to meet the large congregation which Dr. Cumming, the minister, has gathered round him.*

In connection with the church, a handsome school-house has been erected with its elevation in Little Russell-street, under the direction of the same architect. It is of the tudor character in three stories, with a central door on the ground-floor, which on Sundays will give entrance to the church, and a bay window with a smaller window at each side, on the first floor. The string beneath the latter is inscribed, "Crown Court Church Schools, 1848." Six hundred children will be accommodated, and we are given to understand that although connected with the Scotch Church, the building is intended to supply the wants of its very destitute and crowded neighbourhood, without reference to sects. The Government grant in aid of the building fund, has been requested, and teachers sought from the Normal schools in the Borough-road and Gray's-inn-lane.

* We must not omit to mention that a new sewer has been carried through the court, and the owner of every house forced to fill up the cesspools and remove the pumps by which the flowing nuisance was raised, once a week or oftener, and sent down the open court into Russell-street. This evil has been often laid before the Sewers' Commissioners, but in consequence of the obstinacy of the tenants, one of whom would not suffer it to pass under his house, it has only now been accomplished.

SUPERVISING ARCHITECTS.

SIR,—Your late observations on the doings of the "Church Building Society," in respect of the appointment of "supervising architects," will go greatly, and, as I opine, rapidly to the removal of that element in their constitution. Your late correspondent says, very properly, "architects, as a body, will not submit to such an infliction."

It incidentally fell within the range of my engagements last week, in a neighbouring county, to visit a village church which had lately been restored. In the course of the contemplated improvement, it occurred to a beneficent lady, to contribute very liberally towards an enlarged and improved feature, by the addition of a clerestory. The edifice had already so far advanced, that "to return were worse than to go on," and, therefore, the stone pillars, designed originally to carry the roof, were converted into springers for lancet arches of such superincumbent clerestory wall. In the progress of the works, by some accident in the construction of the scaffolding (and which, *en passant*, seems by no means unusual, if the Euston-square evidence have any truth), one of these pillars was driven slightly out of its vertical position, but not so much as to be in danger, or even to create the apprehension of danger, and the church was finished: whereupon, a "supervising architect" arrives, *secundum artem*, to report thereon, and ere he entered the sacred edifice, he pronounced its foundation unstable, and thence proceeding, he declared the pillars to be trembling under their load—the roofing to be ill-constructed—and the works altogether to be badly performed! Such a sentence, so hastily given in the absence of the incumbent, was not particularly Christian-like to the delicate constitution of the vicar's lady. However, on her venturing to say that the "church was founded upon a rock," this ingredient of his condemnation was obliterated from his record. This sweeping censure very naturally placed the excellent pastor, with the wardens, the committee, and the local architect, all on the *qui vive*. Other professional gentlemen were forthwith employed to report, and having thus obtained a multiplied favourable opinion, they waited with some complacency the visit of another "revising architect" from the metropolitan society. In this gentleman, who arrived during my sojourn, the employment had lost all novelty, his practised eye upon structural ingredients saw not the danger which affrighted his predecessor, and he at once confirmed the whole as to stability, skill of workmanship, and quality of material, notwithstanding he detailed the facts,—and hence there is some prospect of peace being restored in the parish.

Don't you think, Mr. Editor, this circumstance a severe satire on some of the appointments?—I am, Sir, &c.

CHARLES HERMSPRONG.

Nottingham Park, March 21, 1848.

ON THE FORM OF SEA WALLS.

INSTITUTION OF CIVIL ENGINEERS.

AT a meeting on the 14th inst., Mr. Joshua Field, president, in the chair, the paper read was "An Account of the Effect of the Storm of the 6th December, 1847, on four Sea Walls of different forms, on the coast near Edinburgh, as illustrating the Principles of the Construction of Sea Defences." By Mr. W. J. M. Rankine.

The principal example given was the sea wall of the Leith branch of the Edinburgh and Dalkeith Railway, finished in 1837, built by the author from Mr. Walker's design. Just after it was completed a violent storm occurred, which injured almost every similar work within its range, but produced no ill effect upon that structure. On the 6th December, 1847, a still more violent storm occurred, which did great damage all around; but the railway wall still escaped without injury. The total length of the wall was about 750 yards, its height was 13½ feet above the beach at the highest point, diminishing to about 6 feet at the ends. The height of the top was 4 feet above equinoctial spring tide level. Its least thickness was 5 feet, and its greatest 10 feet; the back was vertical, but the face had an inclination at the lower part of 5 inches in the foot, gradually becoming curved as it rose upwards, until at the top it overhung slightly. The foundation course was composed of large flat stones, laid horizontally, 4 feet below the surface of the beach, upon a stratum of fine sand and gravel, firm when dry, but moveable when wet. The face was of hammer-drest ashlar, about two feet thick; the back of rubble, 18 inches thick. The interior was filled with concrete. The coping was composed of stones each weighing about half a ton, connected by means of cast-iron dowels. The stone used was Craigleith sandstone. The face joints were laid in cement for a depth of 4 inches. The foundation was protected by a pitching of trap boulders, laid on the natural level of the beach. They were partially disturbed by the storm referred to, and the author ascribed this to their weight being insufficient to resist the vertical oscillation of the waves.

The second example was a vertical sea wall near Trinity, the foundation of which was protected by a dry stone bulwark, sloping at angles of from 30 deg. to 40 deg. The wall was uninjured by the storm, but the pitching was breached at several points. The third example was another wall near Trinity, of a hyperbolic section. The lower part had a slope built dry up to a little below high water mark; at this point there was a sharp curve, and the upper part was nearly vertical, and laid in mortar. The waves extracted the stones of the curved portion, and the upper part being undermined, was destroyed to a great extent. The last example was the bulwark of the Granton Railway, the lower part of which sloped at about 20 deg.; the upper portion was curved, and was covered by a heavy projecting string course and parapet. It was built dry, and the stones of the lower part weighed not less than half a ton each. This bulwark suffered damage to a slight extent in its upper portion.

These examples were stated to confirm the following principles:—That the principal action of the waves in front of a sea wall was a vertical oscillation, produced by the combination of the direct and the reflected waves: that a sloping bulwark gave rise to a sloping oscillation, tending to overturn any portion which projected above the line of slope: that where the strength of a sea wall depended on the pressure of the superincumbent masonry, and the adhesion of mortar and cement, the position of greatest stability was vertical:—and that where the strength depended on the weight of the individual stories, the position of greatest stability was a very flat slope. In the discussion which ensued, instances were adduced of the duration of vertical walls, under the attacks of heavy seas, and on the other hand of their destruction, when flat slopes had effectually resisted the waves: and it was agreed that in this as in all other cases of engineering, no empirical rules should be laid down, but that the skill of the engineer should be exerted to adopt such forms of construction as were best adapted to the locality and the circumstances.

THE SEWERS, THE THAMES, AND PUBLIC HEALTH.

*To the Right Hon. the Lord Mayor of London.**

MY LORD,—The present communication is addressed to your lordship, as conservator of the Thames, in consequence of the thorough conviction that the proceedings of the Metropolitan Sewers Commission are threatening us with the most imminent danger; and I beg to call your attention to the following facts:—

The law of 1535 enacted that any one conveying refuse matter into the Thames should forfeit 100 shillings—so desirous were our ancestors to preserve the noblest river in the land. Previous to our present house arrangement being introduced, the more offensive refuse could not flow into the sewers, and it is only during the last forty years that sulliage has been allowed to be passed into them. The expense and trouble to be incurred by these new house arrangements were considerable, it being necessary to come to terms with a road or paving and parochial trust, with a water company, and with the Commissioners of

* We insert the following that both sides may be heard.

Sewers. The expense and trouble thus to be incurred, and the doubtfulness of the benefit to be derived by a direct communication between a house and a sewer (?) have prevented the rapid introduction of a change of arrangement. One-half only of the houses in the City itself, and a far smaller quantity in the suburbs are drained into the sewers.

With this limited extent of house drainage, the sewers lying east and west of the City are termed "elongated cesspools;" and although the highness of the level of the city and the excellency of the sewers, exempt them from the term, yet the construction of flushing apparatus in the highest situations clearly proves that the refuse already passing into the City sewers does not flow naturally through them into the Thames. With respect to the Thames, it has to be remembered that the evidence received by the Sanitary Commission, and by them deemed so important as to be embodied in their first report, shews the immediate connection between the cholera and the mouths of sewers and rivers receiving the contents of sewers. At Carlisle, it is proved, for example, that cholera broke out near a mill, and raged down the dam-side, all the drains and sewers in that part of the town emptying themselves into the dam-race; few cases occurring in any other part of the town. Cholera appears to have generally in Europe followed the track of rivers and water-courses, and in cities and towns kept in a remarkable manner to the neighbourhood of sewer mouths. In Lancashire it manifested itself with peculiar virulence near the outlet of drains. At Liverpool one morning, it was discovered that several men had been seized with cholera on board a vessel lying in one of the docks. The men were sent to the hospital, and another ship, with a healthy crew, took her station. The next morning all the hands on board were ill of cholera. On examining the dock, it was found that a large sewer discharged its contents under the spot where the vessel was placed. In the metropolis it is proved that the cholera spread from Wapping along that side of the shore, including Limehouse; crossed to the opposite side of the river, namely, Rotherhithe and Bermondsey; it then attacked the lower parts of the borough of Lambeth; next the lower parts of Westminster; then it extended along the Fleet-ditch, and thence passed into the city. This confirms the statements which have frequently been made by competent authority, "that the atmosphere along the bank of the Thames is greatly vitiated by the dissipation of malaria." Dr. Hall, speaking of ventilation, asks very pointedly, "of what advantage is a stream of air bringing the filthy stenches of the Thames, and other rivers, into which our towns at present are drained; a most abominable contrivance, and one of the chief causes of typhus fever and other diseases." These are the consequences resulting from the drainage of perhaps one house in five into the sewers, taking the whole district within four miles of St. Paul's.

With all these facts before us, we hear every other week how much additional refuse has been flushed through the sewers. The sewer mouths being at low-water mark, the Thames can only receive the refuse at or near low-water mark,—a time when it is most objectionable and injurious to the public. It then first runs up the river, and as it afterwards returns, it is met by the fresh tide, to be washed backwards and forwards within a few miles of the city, vitiating the atmosphere and the water with which six out of the eight water companies supply the metropolis. If the house drainage be but as 1 in 5 (and this is admitted), then four times the quantity of refuse will be forced into the Thames by making house drainage compulsory. If the accumulation in cesspools be taken as averaging six years, then four-and-twenty times the quantity has to be forced into the Thames. On the 13th of January it appears "that 3,472 notices had been served for enforcing thorough drainage." Mr. Hosking, in a postscript to a late publication, has been endeavouring to arouse the attention of the public to the dangerous proceedings referred to.

The conviction and warning of a man so well acquainted with metropolitan building and drainage area, is well entitled to receive your Lordship's serious consideration; and when we have heard on the same day "that the offices of the Mendicity Society have been closed in consequence of the prevalence of typhus fever in the establishment; that one person had died from ulcerated bowels, traceable to the opening of a sewer near Thames-bank;" and that another person "had died from English cholera in forty-five minutes after being attacked;" then it does appear to be a duty to the public to make this appeal to your Lordship as Conservator of the Thames, and to call attention to the evidence referred to, respecting sewer mouths and rivers receiving the contents of sewers.—I have the honour to be, your Lordship's most obedient servant, J. J. MOREWOOD.

London, March 16th.

CONSTRUCTION OF GRANARIES.

IN the January number of the *Westminster Review*, the means of preserving corn is discussed, and the following remarks are made on the construction of granaries:—

"Three conditions are essential to the process of putrefaction; viz. heat, moisture, and still air. With wind, moisture is carried off; with cold, the decomposing process is checked, as may be seen by the carcasses of animals that lie through the winter in snowy mountains, and dry up to glue. Without air, every thing is locked up and remains *in statu quo*; as reptiles have been buried for ages in blocks of stone or ancient trees, and then resumed their vital functions, unchanged by time.

In direct opposition to these principles are the granaries of Great Britain and other countries constructed. Their site is generally the bank of a river, or the sea-side. They are built of many floors, at a vast expense. They are provided with many windows, each floor being the height of a man, yet not permitting more than twelve to fifteen inches depth of grain on each floor for fear of heating, unless in the case of very old samples. Men are continually employed to turn the grain over, to ventilate it, and clear out the vermin; and the weevil is naturalised in every crevice, as surely as bugs in neglected London beds, or cockroaches in West Indian sugar ships. It is the admission of air that permits this evil, that promotes germination, that permits the existence of rats and mice. *In the exclusion of air is to be found the remedy.*

The practicalization of this is neither difficult nor costly: on the contrary, close granaries might be constructed at far less proportional cost than the existing kind. They might be made under ground as well as above ground, in many cases better. They might be constructed of cast-iron, like gasometer tanks; or of brick and cement; or of brick and asphalte, like underground water-tanks. It is only required that they should be air-tight, and consequently water-tight. A single manhole at the top, similar to a steam-boiler, is all the opening required, with an air-tight cover. The air-pump has long ceased to be a philosophic toy, and has taken its place in the arts as a manufacturer's tool: and no difficulty would exist as to that portion of the mechanism. Now, if we suppose a large cast-iron or brick cylinder sunk in the earth, the bottom being conical, and the top domed over: an air-pump adjusted for exhausting the air, and an Archimedean screw pump to discharge the grain, we have the whole apparatus complete. If we provide for *wet* grain, a water-pump may be added, as to a leaky ship."

The advantages of air-tight chambers for many other purposes than the preservation of corn would be great. Gutta Percha would seem to afford the means for making the joints of openings, &c., air-tight, at small expense. Few people, however, think of adapting new materials. Routine enslaves us all. We cannot see beyond our noses.

INTRAMURAL INTERMENT.—The committee of the metropolitan clergy, called to examine into a plan for establishing "Parochial burial-places," have made an important report on the subject, admitting the necessity of discontinuing interments within the metropolis.

Correspondence.

A QUERY.

SIR,—Will one of your correspondents favour me with a solution to the following question?

Query.—A church bell, with its appurtenances, weighing five tons, is to be supported in the middle by a beam, having a clear width between the bearings of 20 feet.

Required to know the best form of beam in either of the following materials, and which of these materials is best suited for the purpose, viz., English oak, Baltic timber, or cast-iron. X. Y. Z.

Yeovil.

Miscellanea.

JONES'S FRICTION HAMMER.—We have been favoured, says the *British Mirror*, with a sight of a novel machine which has just been completed, and is now at work at the Great Western Works, the invention of Mr. John Jones, manager of the works, who also invented the "Cambrian Engine." The machine is called a "Friction Hammer," and consists of frames of cast-iron, in which are vertical slides acting as guides to the hammer, and also supporting the machinery necessary for putting the hammer in motion. The hammer consists of a plane bar of flat wrought iron, so arranged as to work in the slides, and is raised by means of two vertical rollers turning in opposite directions, which are made to bear upon the bar by an exceedingly simple arrangement of levers. A slight pressure upon the handle of one lever raises the hammer to any height not exceeding 7 feet; the pressure being removed it falls by its own gravity; this lever is also arranged so as to stop the hammer in any part of its descent, should circumstances render it necessary. The friction rollers are put in motion by means of straps and pulleys, fly-wheels being also fitted on each strap. A double punching and shearing machine of great power, by the same inventor, has also just been completed at these works.

NEW MARKET-HALL AT LYTHAM.—The foundation has been laid of a new market at the village of Lytham, near the mouth of the river Ribble in Lancashire. The market is 100 feet long, 36 feet wide within the walls, and 24 feet high to the inside of the apex of the roof. The exterior has in the centre a tower 17 feet square and 30 feet high, exclusive of a bell and clock turret above. In the centre is an archway formed by detached Tuscan columns and square pilasters rusticated by square blocks left rough; above is the entablature of the order, and an arch and keystone carved with a cornucopia, symbolic of plenty. Above is a string course, triple window, with circular heads and keystones, and above these a cornice of bold projection with cantilevers, &c. Out of the roof an octagon turret rises, containing a clock and bell. On each side of the centre tower, on the ground-floor, are four open arches. The ends have each three stone arches, the centre ones containing wooden doors, the side arches, windows rusticated. The building is of red brick, with moulded quoins; the plinths, imposts, keystones, columns, pilasters, &c., of stone. Mr. Charles Reed, of Liverpool, is the architect employed.

ASSESSMENT OF MILTON.—Sir: Noticing in your last week's BUILDER a statement to the effect that the parishes of Gravesend and Milton were about to be re-assessed, I beg to give you a list of the tenders which were delivered to the Board of Guardians for that purpose, by which you will see that the appellation "blind," which is sometimes applied by you to certain builders, may with equal propriety be attached to certain surveyors. The tenders were as follows:—

Messrs. Hubble and Gould, jun.	£250
Mr. Doule	224
Mr. Martyr	120
Mr. Tress	120
Messrs. Burr and Son	64

I may observe that these tenders were not for the assessment of *Gravesend* and Milton, but for that of Milton only; the number of assessments in which parish exceed 1,900!

Gravesend. CONSISTENCY.

PROJECTED WORKS, &c.—Tenders have been called for by advertisement for the erection of a battery, &c. near Tilbury Fort; works at the Bedford County Prison; a ward at the West Ham Union Workhouse; a retort-house, chimney, coal and lime sheds, at the Monkgate Gas Works, York; three shops and dwelling-houses, in Silver-street, Hull; and also for a supply of 1,600 tons of chairs and 40,000 sleepers (separate tenders), for the Bristol and Birmingham division of the Midland Railway.

RECOVERY OF DISTRICT SURVEYOR'S FEES.—At Guildhall, last week, Mr. G. A. Young, surveyor, came before the sitting magistrates to answer the complaint of Mr. Woodthorpe, the surveyor of the eastern district of the city of London, for neglecting to pay to him 2*l.* 2s., as his costs, pursuant to an award of the official referees. Mr. Young said he refused to pay this on the principle that those who endeavoured to serve the public ought not to be mulcted for their pains. In passing accidentally by America-square, he observed a house to be in a condition dangerous to the public, and he gave notice to the district surveyor of the fact. The surveyor thought the building safe, but he (defendant) still thought otherwise, and brought the matter under the notice of the official referees, having no personal interest in the matter at all, and interfering solely for the safety of the public. Mr. Woodthorpe said the case did not stand exactly as represented. Mr. Young would not have been asked to pay anything if he had not appealed against his decision. The surveyor for the owner of the house concurred with him that the building was safe, and so did the official referees; and as these four surveyors were of one opinion, the magistrates would believe Mr. Young was wrong, and had troubled them all unnecessarily. He had had eight attendances on the subject, and this might occur every day if it were not checked by ordering the payment of costs. He handed in the award to prove his case; and the magistrates, after referring to the statute, said their duty was only ministerial, to enforce payment of the award, without entering into its fairness or expediency. The fees must be paid. The district surveyor presented them to the poor-box.

BISHOP'S PALACE, HEREFORD.—At a soirée given by the Hereford Literary and Antiquarian Society last week, amongst other communications, the dean exhibited a number of drawings and plans of the ancient Norman refectory at the episcopal palace, remarking that the present entrance hall is, in fact, nothing but the ancient refectory encased. He explained, at some length, the construction of the roof, and exhibited a portion of one of the semicircular arches, with two of the capitals, which were all apparently of oak. He remarked that the arch consisted of a torus between two fillets. The nail-head ornament was also used. He went on to observe that the plan of the hall was that of a central portion, separated by longitudinal arches from two aisles; the roof of the central hall being spanned by three semicircular arches. The effect must have been very striking, from the massive simplicity of the construction. He found that the hall was used as a refectory for the canons in residence; and a book which he held in his hand contained a great many curious items in the accounts, illustrative of the regulations under which the members of the cathedral body were at that period.

THE INSTITUTE OF FINE ARTS.—A consersazione given by the Institute of Fine Arts, on Saturday last (18th) was very numerously attended: a good show of pictures and works of art occupied the walls and tables, and induced much pleasure and instructive chat. We should be glad to see a larger number of the elder members of the profession aiding in the progress of this institution, which would lead to the adoption of more extended views, and enable it to take a proper position. Even as it is, the exercise of energy and ability would greatly elevate its character.

NEW HOUSES OF PARLIAMENT.—The commissioners appointed to superintend the building of the new Houses of Parliament are, Earl Grey, Mr. Greene, M.P., and Sir John Burgoyne.

IMPROVEMENTS IN GALVANIZATION OF METALS.— Messrs. Morehead and Rogers have patented the use of alloys of zinc and tin, or zinc and lead, or all three, combined in certain cases with antimony (an electro-thermal antithesis to zinc, or a negative pole to it as the positive), in coating iron, whereby the protective power of the zinc is combined with certain other advantages, such as the obviation of its brittleness by aid of the tin, which is well known to coat iron without that tendency to scale off which zinc has manifested. The patentees have also protected various other improvements, such as the use of vapour of muriatic acid to dissolve the oxide generated on the iron surface, and the use of rollers plunged in a soft and not quite fluid bath of alloy, while the iron plates to be coated are pressed by the rollers during the process of coating.

PHILOSOPHY FOR THE WORKING CLASSES.—The *Liverpool Mercury* very justly remarks, "Those who desire the stoppage of trade cannot do better than riot; those who desire increased taxation, impoverishing their employers, and thereby lessening work, will riot; those who desire severe government, restrictive laws, and legal bloodshedding will riot. But those who desire peace, and employment, and wages, and cheap food, will assist the middle classes in enforcing public economy and equal taxation, so that the limbs of industry may be free, and the fruits of industry may be enjoyed by all classes entitled to them."

PLUGGING AVOIDED.—The evils resulting from plugging in flues for skirting grounds, &c., often pointed out in our pages, have led a correspondent who signs himself "James Ivison," to suggest the manufacture of a brick with a dove-tail mortice in it to receive a plug formed in three pieces,—an ingenious notion deserving of consideration. He says, —"I need not tell you how strongly plugging in green work is to be deprecated, more especially in work no thicker than 9 inches; and as to wood bricks, they seldom or ever remain tight. The plug-brick could be made of coarse pottery or hard brick material, or when it did not interfere with the bonding of the work, stone could be used of any size, as in the north of England it is extensively used and worked cheap. The plugs could be fixed in with marine glue, and built in the wall as the work proceeds."

THE CYLINDER RAILWAY BRIDGE OVER THE CONWAY.—This novel and bold piece of iron construction, designed by Mr. Robert Stephenson for the passage of the Chester and Holyhead Railway, has been floated to its position and is ready for hoisting. Two or three weeks, however, will probably elapse before it is in its place. The tube or cylinder is made of wrought-iron plates, varying in thickness /from ¼ inch to 1 inch, riveted together, strengthened by T irons; and, to give additional strength to the whole, a series of cells is formed at the top and at the bottom of the tube, between an inner ceiling and floor and the exterior plates. The upper cells, eight in number, in the transverse section, are nearly square, being 1 foot 9 inches high, and 1 foot 8¼ wide. The lower cells, six in number, are 2 feet 3½ inches wide, by 1 foot 9 inches high. The space between side and side of the tube, is 14 feet, and the height of the whole, inclusive of the cells, is 22 feet 3½ inches at the ends, and 25 feet 6 inches at the centre. The total length of the tube is 412 feet. One end of the tube will be fixed to the masonry of the pier, but the other end will be so arranged as to allow for the expansion of the metal by the action of atmospheric variations, and will, therefore, rest upon eleven rollers of iron, running on a bed of plate; and, that the whole weight of the tube may not be carried by these rollers, six girders are carried over the tube and riveted to the upper parts of the sides of the tube; and these side portions rest upon twelve balls of gun-metal running in grooves, which are fixed to iron beams let into the masonry.* The whole weight of the cylinder is stated to be 1,300 tons: two hydraulic rams of great power will be used to raise it. Its unmitigated ugliness is much to be deplored.

* The "Illustrated News" of March 11th, contains several views of the bridge, and diagrams shewing the construction.

THE DEE BRIDGE.—From a conversation which took place in the House of Commons a few evenings since, it would appear that one of the remaining girders of the bridge had been cracked by a workman driving a pin into it with a four-pound hammer, and that some consternation had been excited. Mr. Strutt said he was enabled to state that, though there was no danger to the public in consequence of that crack, it was the immediate intention of the Company to remove the girder and replace it with a sound one. Precautions had in the meantime been taken by the Railway Commissioners that so long as the structure remained temporary it should be visited from time to time, and that if anything was seen likely to create alarm, or in any way inconsistent with the public safety, measures should be taken to provide against such a contingency, and a report made to the commissioners thereon.

THE LIVERPOOL STONEMASONS AND THEIR EMPLOYERS have had a misunderstanding as to the terms of an alleged mutual resolution, formally entered into between them in November last, whereby it is said to have been agreed that, while a reduction of wages to 27s. a week should then be submitted to by the men, a return to the previous rate would be made by the masters on 1st March, 1848. Some of the masters, however, as the workmen now complain, have refused to fulfil the latter terms of their mutual resolution, and a partial strike is the unfortunate result.

A SUBSCRIPTION for behoof of the unfortunate English, Irish, and Scottish workmen, to whom their fellow-workers in France have given "French leave" to quit the fraternal dominion of the Republic, has been opened by Her Majesty and the Prince Consort, with the sum of 200*l.* Messrs. Herries and Farquhar are the bankers to the Committee. The Provisional Government of France (quite unnecessarily, we imagine,) have warned all *foreign* workmen that they need not expect to reap any benefit by the grand schemes about to be carried out for behoof of the Parisian and other French operatives. They might at same time, however, have intimated that the savings and wages of those who have been expelled so summarily without either, would not be included under the equally grand schemes of confiscation already carried out in the suspension of savings and other bank payments in cash, by means of which so many of these poor people have already suffered, and are likely yet to suffer.

THE BATHS AND WASHHOUSES in George-street, Euston-square, since opening in August, 1846, have been attended by 179,000 bathers, and 56,237 washers, &c., of nearly 2,000,000 articles. The receipts for five weeks ending 12th inst. were 154*l.* 14s. 4d.; expenses, 119*l.* 5s. 7d.; profit, 35*l.* 8s. 9d.; donations, 60*l.*—reducing the building debt, of 815*l.* only now remaining and in rapid course of payment.

GAS IN MARYLEBONE.—Resolutions in favour of the admission of the Western Gas Company into the parish have been ultimately confirmed by a majority of 58 to 27 opposed to them. "The vestry was again densely crowded by the members, as was also the gallery by the rate-payers." One of the speakers, Mr. Glasier, in considering the reasonable prospect of benefit to the Western Company by allowing it to compete with the Imperial, reminded the meeting that "the Imperial were in the habit of paying 6 per cent., *and* 3 *per cent. bonus*, and that they had a reserve fund of 200,000*l.*" The Western, he observed, had recently expended 40,000*l.* in their works.

THE NEW NATIONAL GALLERY.—A subscriber says,—I have reason to believe it is the intention to erect houses on the area occupied by Leicester-square. Before such an opportunity is entirely lost, might it not be suggested to secure so eligible, and central, a site for a National Gallery, and render it a building an ornament to the country, and appropriate to its purpose. A grand quadrangular edifice might be formed in every respect suited to such a purpose.

PETITIONS AGAINST THE PATENT LAWS.—We understand that petitions, praying for a reformation of the great abuses which at present exist in the patent laws, are in course of signature. Reformation is greatly needed.

MEETINGS OF SCIENTIFIC BODIES

Held during the ensuing week.

TUESDAY, March 28.—Institution of Civil Engineers, 8 P.M.

THURSDAY, 30.—Society of Antiquaries, 8 P.M.

TO CORRESPONDENTS.

Received.—"J. R." (Red Lion-square), "W. N.," "H. B.," "H.," "H. W. B.," "J. F. W.," "F. S.," Kent (Thanks), "T. O. M.," "P. H. F.," Stroud (If not inconvenient, we should leave the area open), "R. C." (Take proper advice), "W. N." (Mr. Grissell is the contractor: time is necessarily uncertain); "C. H." Nottingham (next week); "R. S." (No); "W. P. A." (The numbers may be had), "T. G." (Ditto). "Studies from old English Mansions, Fourth Series; their Furniture, &c." by C. J. Richardson, F. S. A.: McLean, Haymarket. "The Baronial and Ecclesiastical Antiquities of Scotland," by R. W. Billings and W. Burn: Blackwood and Sons—Part XII. Mr. Phillips's "Report on Sanitary State of Marylebone."

"*G. J. K.*"—Now too late.

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.

ADVERTISEMENTS.

ARCHITECTURAL COLOURING and PERSPECTIVE. Established 1835.—CLASSES for the above, on Mondays and Thursdays, are instructed at 69, John-street, Fitzroy-square, by Mr. RAWLINS, Teacher of the same at St. Mark's College, Chelsea.—Terms, for the full Perspective Course, Two Guineas.—Exhibition Drawings, &c., prepared.

TO STONE-MASONS.

A SMITH and BUILDER'S IRONMONGER, who requires some Stone-work Erecting, would be glad to meet with a Stone-mason who would take Smiths'-work or general Ironmongery in return, at AGREED PRICES on both sides. As the stone-work required would come to several hundred pounds, this would be found an advantageous opportunity to any mason who may have buildings now erecting.—Application to be made, by letter only, pre paid, with real name and address, to A. Z., Glascott's Metal Warehouse, 20, Brownlow-street, Drury-lane.

BUILDERS and Others desirous of embarking in a BUILDING SPECULATION, are invited to inspect a plot of Freehold Land, containing about five acres, situate at EAST BOURNE, in SUSSEX. The land will be let on Building-lease (with powers of redemption), in plots. It is most desirably situated on the Cliff, and adjoining to the Sea-houses; the soil is dry, and the supply of water ample; brick-earth and stone are on the spot. The Railway is fast approaching completion, and the Station will be within a quarter of a mile of the Land now offered.—Plans may be seen, and all particulars known, by applying either to Messrs. SIMPSON, 29, Saville-row, London, or to Mr. JAMES BERRY, Architect, Lewes.

TO BUILDERS, PAINTERS, AND OTHERS.

MESSRS. WOOD and Co., GRAINERS and WRITERS to the Trade only.
70, York Road, Lambeth; and at 28, Cross Street, Blackfriars Road.
*** An Apprentice wanted.

WEST of LONDON and WESTMINSTER CEMETERY, Old Brompton and Fulham-road, 2 miles only from Piccadilly. Consecrated by the Bishop of London in 1840. The public are invited to inspect the Cemetery, which is open daily, for interments, from Eight o'clock in the morning until sunset. Tables of charges, and other particulars, may be obtained at the office, 153, Piccadilly.
A portion of the ground is unconsecrated.
JOHN H. RUDDICK, Secretary.

PAPER-HANGINGS.—Builders and the Trade are respectfully invited to inspect the immense STOCK of PAPER-HANGINGS always on hand at S. TUCKER'S Paper-hanging Warehouse, 264, High Holborn, near Lincoln's-Inn-fields, and also at the Manufactory, 44, Cannon-street-road, St. George's East, which consist of every variety of design, and suitable for every class of dwelling, and at astonishing low prices, as an inspection will prove. Bed-room papers from ½d. per yard. Please observe the address, 264, High Holborn.

PAPER-HANGINGS, CHEAPEST IN LONDON.—Builders, the Trade, and Country Dealers, may select from a Stock of 20,000 Pieces, of the newest designs, French and English. Bedrooms, ½d. per yard; Satins, 3d. per yard; Flocks, 6d. per yard. Patterns for approval sent in town or country; and Goods forwarded free of expense. A large discount allowed on taking a quantity. Panel decorations, flowers, or oaks remarkably cheap. Terms, cash. Established twenty years.
W. CROSBY, 22, Lowther Arcade, Charing Cross.

THE FRENCH REVOLUTION and FRENCH PAPER-HANGINGS.
Messrs. MARKS and Co. beg to inform the Trade that the greatest tranquillity exists at present in all the Paper-hanging Fabriques; that their new Spring Stock, embracing every novelty, is at the warehouse, at the lowest Paris prices with the duty. Also a number of expressly-made original designs, printed here, free of duty, at prices varying from 8d. to 3s. per piece of twelve yards long.
39, Princes-street, Leicester-square.

PAPER-HANGINGS, MANUFACTURED UNDER HER MAJESTY'S ROYAL LETTERS PATENT.

E. T. ARCHER, 451, Oxford-street, solicits an inspection of the various DECORATIVE PAPERS, fitted up in panels on the walls of the extensive range of apartments, built expressly for that purpose; where also is kept an extensive stock of every variety of Paper-hangings, at the lowest possible price and of the best manufacture, in English and French Designs, by the best Artists; and where may be had a large assortment of French and other Continental Paper-hangings always on hand.—Builders and large Consumers are particularly invited to the above.—451, Oxford-street.

TO GAS COMPANIES, Gas Fitters, and Gas Consumers.—N. DEFRIES, 19, Hampstead-road, 67, St. Martin's-lane, and 118, Argyle-street, Glasgow, having proved by eight years' experience his DRY METER to be unrivalled, begs to say, that nearly 20,000 are now in use, defying injurious Gas, and are never affected by Heat, Damp, or Frost. They may be obtained on Hire of all the Gas Companies who supply Meters to their Customers.—Testimonials of great value may be obtained at either Factory.

DOMESTIC GAS FITTINGS. — The cleanliness, cheapness, brilliancy, and safety of this mode of lighting private residences are leading to its general adoption. GEORGE and JOHN DEANE'S stock of LAMPS, Chandeliers, Brackets, &c., is very large, and exhibits the most elegant and modern designs. G. and J. DEANE fit up single apartments or houses on true scientific principles, and in the most artistic style; and as every thing is got up in their own workshops, G. and J. DEANE can engage for the strictest punctuality and the lowest possible charges.—N.B. Plans and estimates prepared.—GEORGE and JOHN DEANE, Gas-fitters, opening to the Monument, 46, King William-street, London-bridge.

MORTGAGE AND ANNUITY OFFICE, No. 125, CHANCERY-LANE.

PERSONS requiring LOANS by way of MORTGAGE, or otherwise, upon any available security, may at all times procure an advance to the extent of from £100 to £150,000, or so much as the property will bear, by applying to MR. BRAY, surveyor, at the offices as above.
N.B. To expedite the procuration, personal application at the office would in all cases be better, the party bringing with them the abstract of title, plans, &c.

SMITH and ENGLISH, ENGINEERS, BUILDERS, MACHINISTS, IRON and BRASS FOUNDERS, and GENERAL MANUFACTURERS,
PRINCES-STREET, LEICESTER-SQUARE, LONDON.

IRON FOUNDRY, 9, Brick-lane, Old-street, St. Luke's.—J. J. JONES having made great additions to his STOCK OF PATTERNS, begs to inform the Trade, that he can now supply them with Plain and Ornamental Iron Columns, Girders, Railings, Gates, Iron Coping, Balconies, Window Guards, Verandahs, Ornamental Staircase Panels, Iron Staircases, Tomb Enclosures, Trellis Panelling, Lamp and other Brackets, Cantilevers, Newel Bars, Water Closet Work, Area Gratings, Fly and other Wheels, Wheel Plates, &c.
BAKER'S OVEN WORK, Forge Backs and Troughs, Rain Water Pipes and Gutters, Sash Weights, Furnace Bars, Stoves, Ranges, &c., always in stock.

IRON FOUNDRY,
168, DRURY-LANE, and CHARLES-STREET, DRURY-LANE.
JOSEPH GLOVER,
Solicits the attention of the Trade to his extensive Stock of PATTERNS for CASTINGS of EVERY DESCRIPTION, consisting of those for every purpose, either structural or ornamental.
Wheel Pinion and Steam-Engine Patterns; Range Stove and Hot Plate Metal.
A stock of Rain-Water Pipes, Plain and O G Guttering, Air Bricks, Sash Weights, &c. &c.
A very superior description of Soot Door, particularly suitable for internal work, being perfectly secure, and not unsightly.
ESTIMATES given for IRON ROOFING and every description of Ironwork, complete to specification, and the work executed with every attention to quality and dispatch.
GLOVER'S FOUNDRY,
168, DRURY-LANE, and CHARLES-STREET.

IRON-WORK FOR BAKERS' OVENS.

F. A. TIDDEMAN, Purfleet Wharf, Earl Street, Blackfriars, keeps an assortment of Stocks, or Mouthpieces; Plates, Furnace-bars, Top and Fall Pieces, Stoppers, Chimney-bars, Inside, Outside, and Ash pit; Doors and Frames, Boilers and Frames, Lamps, &c., &c.; all of the best description, at very moderate prices.—CAST-IRON UPSETS.

OLD-ESTABLISHED WHOLESALE IRONMONGERY WAREHOUSE, Kitchen-range, and Stove-grate Manufactory, 18, Cross-street, Walworth.

JOHN GRICE most respectfully solicits the attention of Architects, Builders, and Carpenters, to his Stock of Black and Bright Stoves, Kitchen Ranges, &c., &c.
Black Registers, from 6½d. per in. and upwards.
Bright ditto with Black and Bright Bars, 3l. 10s. and upwards.
Self-acting Kitchen Ranges, with Oven and Back Boiler, Wrought Bars, Fittings Bright:—

3 ft.	3ft. 6 in.	4 ft.
3l. 3s.	3l. 14s.	4l. 5s.

All articles made on the premises and warranted, and delivered free of expense within five miles of London. Bell-hanging in superior style, hung in secret, 9s. per pull.

TO ARCHITECTS, BUILDERS, &c.

R. HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.
Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

3 ft.	3 ft. 3 in.	3 ft. 6 in.	3 ft. 9 in.	4 ft.
£3. 6s.	£3. 13s.	£3. 16s.	£4.	£4. 10s.

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

3 ft.	3 ft. 3 in.	3 ft. 6 in.	3 ft. 9 in.	4 ft.
£5.	£5. 15s.	£6. 5s.	£6. 10s.	£7.

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 3½d., and 4d. do.
Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.
Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

TO BUILDERS and CARPENTERS.—Elliptic Stoves, double backs, 3d. per inch. Registers, 6½d., 7d., 8d. per inch.
Cottage Ranges, with Oven and Back Boiler, 3 ft., 33s.; 3 ft. 3 42s.; 3 ft. 4, 44s.; 3 ft. 6, 46s.
Self-acting Ranges, with Circular Oven and Back Boiler, best Wrought Bars and Bright Fittings,
3 ft., £3. 3s. 3 ft. 6, £3. 12s. 6d. 4 ft., £4.
Best Patent Cut Clasp.

5d.	6d.	8d.	11d.	1s. 4d.	1s. 10d. per 1,000.
3d.	4d.	6d.	8d.	10d.	20d.

Best Sheet Floor Brads 14s. per cwt.
Best Town Glue 38s. Do. Scotch, 32s. per cwt.
Best Patent Sash Line.

4s. 3d.	5s.	6s. 6d.	7s. 6d.	10s.	12s. per gross.
1	2	3	4	5	6

At F. R. WILLIAMSONS IRONMONGERY and STOVE WAREHOUSE, 35, Chiswell-street, Finsbury-square.
☞Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

IRONMONGERY WAREHOUSE, 18, Blandford-street, Manchester-square, leading from Baker-street, Portman-square.

TO BUILDERS and CARPENTERS.—In consequence of the recent reduction in the Price of Iron, the following are the present Prices of Nails, &c., at the above Warehouse:—
Best Patent Cut Clasp.

4d.	6d.	10d.	20d. per 1,000.
6d.	8d.	1s. 4d.	1s. 10d "

Cast Butts.

2 in.	2½ in.	2½ in.	3 in.
11d.	1s. 2d.	1s. 4d.	2s. per doz

Also Best Patent Sash Line.

3	4	5	6 per doz. knots.
6s. 6d.	7s. 6d.	10s.	12s.

Every other article equally reasonable.
Catalogues of Prices can be had on pre-paid application, inclosing postage stamps.—Country orders will meet with immediate attention, and will be executed either upon the receipt of a remittance for the same, or of a satisfactory reference in London.
JOHN and EDWIN YOUNG, Proprietors.

TO BUILDERS AND CARPENTERS.

BURT and POTTS, York-street, Westminster, Wholesale and Retail Ironmongers, Smiths and Stove Grate Manufacturers. Delivered free within five miles.
Cast Iron Rain-water Pipe:—

2 in.	2½ in.	3 in.	3½ in.	4 in.
1s. 1d.	1s. 3d.	1s. 5d.	1s. 9d.	2s. 2d. per yard.

Sheet Floor Brads, 14s. per cwt. All other Nails in proportion.
Register Stoves with inside backs, 6½d. and 7d. per inch, and upwards.
A variety of Best Black Ground and Bright Register Stoves.
Elliptic Stoves, with inside back, 3½d. per in.
Self-acting Ranges with Circular Ovens, Back Boilers, and Wrought Bars:—

3 ft.	3 ft. 6 in.	4 ft.
£3.	£3. 8s.	£3 13.

Iron and Steel of every description.

R. FULKES, Wholesale Ironmonger, Stove and Range Manufacturer, 91, Park-street, Camden Town, London.
Best Cut Clasp Nails, 16s. per cwt.
Best Cast Lath Nails, 11s. 6d. per cwt.
Best 6-inch Mortice Locks, with large Brass Furniture.
Fitted with Ducer' Patent Spindles, 36s. per dozen.
Best Butt Hinges, 2 in. 2½ in. and 3 in.

1s. 2d.	1s. 6d.	2s. 6d. per dozen pair.

Elliptic Stoves, 3d. per inch.
Register Stoves, 6½d. per inch.
Best Self-acting Ranges, fitted complete—

2 ft.	3 ft. 6 in.	4 ft.
2l. 17s. 6d.	2l. 7s. 6d.	2l. 12s. 0d. each.

Orders from the country, containing a remittance or Post-office order (made payable at the Camden Town Post-office), forwarded same day.

CAST-IRON PIPES, for Gas, Water, or Drainage, 1¼ to 12 inches diameter, with every requisite connection. Lamp Columns and Sewer Grates of various patterns. Wrought-iron Tubing of an approved manufacture. In stock at KELLY and WHITE'S, Iron Wharf, 66, Bankside, London.
Girders, Columns, and Castings of any description to pattern or drawing.

RAIN-WATER PIPES, Heads, Shoes, and Elbows, Half-round and O G Gutters, Sash Weights, Railing Bars, Sink and Stable Traps and Gratings, Air Bricks, Coal Plates, &c.; Gas and Water Pipes from 1¼ inch. to 12 in. in diameter, with Bends, Branches, Syphons, and Lamp Columns; also Hot-water Pipes, with all the usual connections. A large Stock of the above Castings at JONES'S Iron Bridge Wharf, No. 6, Bankside, Southwark.

FLEXIBLE PIPES AND TUBING, FOR PUMPS, ENGINES, GAS, &c.

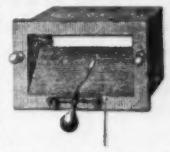
PATENT VULCANIZED INDIA-RUBBER HOSE-PIPE and TUBING of every description. These Pipes are made to stand hot liquor and gas without injury; and as they do not become stiff in the coldest temperatures, or require any application when out of use, are particularly well adapted for Fire-Engines. Vulcanized India-rubber Washers for steam and hot-water joints, &c., of all sizes.—Sole Manufacturer, JAS. LYNE HANCOCK, Goswell-mews, Goswell-road, London.

By Her Majesty's Royal Letters Patent.

GLASS VENTILATORS FOR WINDOWS.

BAILLIE'S Patent Transparent Slide Valve VENTILATORS, supplied at a reduction of 40 per cent. from the original Tariff. Their extensive and successful application to public offices, bed-rooms, and the cure of smoky chimneys, prove their great utility. Coloured Glass of every tint at wholesale prices.—Designs and estimates for church and ornamental windows forwarded on application to EDWARD BAILLIE, Glass Painter, Stainer, and Embosser, 12a, Cumberland Market, Regent's-park, London, where specimens are to be seen.

VENTILATION.—FAIRS' PATENT TRANSPARENT VENTILATORS.—The progressive increase in the use of this invention during several years' trial, in which it has had to contend with many imitations, encourages the Proprietors to recommend it with confidence to the Public generally, and to the Building Trade in particular, to whom they are now enabled to offer greater inducements for its adoption. For the CURE of SMOKY CHIMNEYS, and the thorough, but safe and agreeable, Ventilation of Apartments, Offices, &c., this invention is unequalled; and its general adoption in the Royal Palaces, the Public Offices, Banking-houses, Insurance Offices, and in the dining-rooms and other apartments in the houses of the nobility and gentry, are sufficient evidence of its efficacy.
Orders received by FAIRS and Co., No. 139, New Bond street; BUNNETT and CORPE, No. 26, Lombard-street; and at the Manufactory, 15, Gillingham-street, Pimlico.
N.B. Ornamental Zinc Sashes and Casements for Gothic Windows, Stained Glass, &c.



DR. ARNOTT'S CHIMNEY VENTILATOR.
F. EDWARDS, Stove Maker to her Majesty, 20, Poland-street, Oxford-street, begs to call the attention of Architects, Builders, Gas-fitters and the Public, to the truly invaluable advantages to be derived from the use of Dr. Arnott's Valve for the Ventilation of Rooms of every description.
Prices from 7s. 6d. to 20s. each. A prospectus, containing full particulars, to be had on application.

SMOKY CHIMNEYS—NO CURE, NO PAY.

Twenty-five years' extensive experience in all the branches of a stove manufacturing business, and the cure of smoky chimneys of every description, fully justifies F. E. in stating that he can undertake the cure of smoky chimneys on the above equitable terms.

GRANT'S PATENT ROTARY WIND-GUARD, for the prevention of Downward Draughts and cure of Smoky Chimneys, by discharging a Strong Current of Air at the Mouth of Chimney-Pot. The attention of the Public and the Trade is respectfully solicited to this simple Apparatus. The Patentees guarantee its effecting the purposes named. Let the wind blow from what quarter it may, it is not liable to derangement; can be easily and cheaply applied, and does not in any way interfere with the Sweeping the Chimney.

This apparatus is also applied to work an archimedian screw or fanner, for exhausting the vitiated air from public or crowded rooms. In no instance has it failed to accomplish the above-named objects.—Manufactured by the Patentees, LAMBERT and GRANT, 21, Elizabeth-street, Eaton-square.

WILSON and Co.'s PATENT VENTILATING CHIMNEY-POT, for the Cure of Smoky Chimneys, has been tested extensively throughout the Kingdom for the last three years, and has proved to be an effectual remedy.
The Patent Pots cannot corrode or get out of order, and can be effectually swept by the sweep's machine.
J. W. and Co. had the honour of fixing upwards of fifty of the Patent Ventilating Chimney Pots, in artificial Stone Cement, on the chimneys of Buckingham Palace; since which a number have been fixed at Windsor Castle.
The Patent Pots have proved to be the most effectual invention ever yet discovered, and also unrivalled for their ornamental appearance; they are manufactured of artificial Stone Cement, Iron, or Zinc.
The Trade supplied with them at the Manufactory,
VALE PLACE, HAMMERSMITH, MIDDLESEX.
Inquiries from the Country to be addressed to Messrs. Wilson and Co., at their Manufactory, as above. Prices and prospectuses forwarded by return of post.
N.B. Licenses granted to Manufacturers.

J. MASON begs to call the attention of the Nobility and Gentry to his superior Collection of Terrace Pieces, Garden and Pleasure Ground Vases, Flower Pots, Fountains, &c. &c. Also Architects, Surveyors, and Builders to a great variety of Perforated Ornaments, for Parapets, Balconies, Terraces, and Garden Walls, Capitals, Trusses, Consols, Chimney Shafts, and other Ornaments, &c. Coats of Arms finished in a superior manner, all at half the usual price.—25, Providence-row, Finsbury-square, from Albion Wharf, Blackfriars-bridge.

WILKINSON'S Improved SEWERS are guaranteed to be more durable than the hardest burnt bricks, quite smooth inside; can be supplied in lengths of 12 or 16 feet, either complete or the bottoms only. House Drains are made with loose cover, to any shape or size. Further particulars may be had on application to W. B. WILKINSON, Prudhoe-street, Newcastle-on-Tyne.

THE REGISTERED VALVE HYDRAULIC RAMS.—FOUNTAIN BASINS, in Iron; Water-wheels, Steam-engines, &c.; Pumps for deep Wells, &c.; Liquid-manure Pumps; Fountain Jets of every design; Douche Baths, and every other description, erected and heated on scientific principles; Buildings heated by Hot Water; Kitchens fitted up in the most economical plan, both as regards Fuel and Trouble; Table Fountains to play Scented Water during Dessert; Analysis of Water from 7s. 6d. to 2l. 2s.; by FRAZEMAN ROE, Hydraulic Engineer and Fountain Maker, No. 70, Strand, London.—Wells sunk and boring executed in town and country.

PREPARED FLOORING BOARDS.

AT REDUCED PRICES.

ALWAYS ON SALE, a Large Assortment of DRY PREPARED FLOORING BOARDS and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ¾ inch to 1¼ inch thick.
TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son), and Great Smith-street, Westminster.—Mouldings prepared by machinery.

ALFRED ROSLING begs to inform the Trade and Consumers generally, that he keeps constantly in stock a large and very general assortment of Prepared Floor Boards and Matched Boarding, planed to a parallel breadth and thickness, and fit for immediate use; also a variety of machine-prepared Mouldings, which are finished with great accuracy and attention to quality of workmanship.—Southwark Bridge Wharf, Bankside, and Old Barge Wharf, Upper Ground-street, Blackfriars.

T. ADAMS (from Byron and Co.), late S. Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH-BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery. Cut Deals and Scantling of every dimension. Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense (except timber). Sawing charged at mill prices. Very extensive Drying Sheds.

MUIR'S PATENT PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

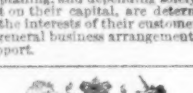
TIMBER of any size, PLANK, DEALS, and BATTENS, &c., Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills,
Gillingham-street, Pimlico.

N.B. Estimates given for Sawing and Planing.

TIMBER AND DEAL SAWING AND PLANING MILLS, Belvidere-road, Lambeth, near Waterloo-bridge.

THE GENERAL WOOD-CUTTING COMPANY continue to receive the most satisfactory assurances from all who have given their improved machinery a trial, that there is no method of preparing floor-boards, matched linings, skirtings, &c., by which accuracy, despatch, and economy of material are so certainly obtained. In shooting, or grooving and tongueing a board (although curved), the machine follows the edge, removing no more than the skin of the wood, and by the use of a peculiar saw for deep cutting, the board comes off with a perfect surface, thus obviating the necessity of reducing its thickness in order to plane out the hollows. The Company being neither builders nor timber merchants, unconnected with any trade but that of sawing and planing, and depending solely on the public for a moderate interest on their capital, are determined, by an assiduous attention to the interests of their customers, both as regards workmanship and general business arrangements, to merit a continuance of their support.

NOTICE.  PLANING
IMPROVED MACHINERY.

T. F. ALLCOCK solicits the attention of the trade to his newly-erected and much-improved prepared FLOORING WORKS; also Match Boarding, Ploughing, Grooving, Rebating, &c. &c., with the greatest accuracy and despatch, together with the least possible waste, leaving the edges shot as from the Tyzing Plane.—Box Makers and large consumers of Planed Boards contracted with.—Deals drawn in, cut, planed, and delivered at a few hours' notice.—Commercial Sawing and Planing Mills and General Wood Preparing Works, Commercial-road, Lambeth, between Blackfriars and Waterloo Bridges, near the Cornwall-road.

WOOD THOROUGHLY SEASONED in DAYS instead of YEARS, by DAVISON and SYMINGTON'S PATENTED PROCESS, at the Patent Desiccating Company's Establishment (for Seasoning, Sawing, and Planing Wood), at the Grand Surrey Mills, immediately adjoining the Commercial and East Country Docks, Rotherhithe. The new process ensures the entire removal of moisture, hardens the gums, prevents further shrinkage, and strengthens the fibre.—For scale of prices, or license to work the patent, or any further information, address, post-paid, or apply to W. H. TANQUERAY, Secretary at the temporary offices of the Company, 28, New Broad-street, City.

PEAKE'S TERRO-METALLIC TILES, PIPES, &c., of at least 100 sorts and sizes. In addition to the numerous purposes to which it is applied already, this Material may be moulded into a great variety of articles required either at home or abroad by the Nobility, Clergy, Gentry, Architects, Civil Engineers, and Builders; also by Owners and Occupiers generally of Land, Mines, Railways, Buildings, Gardens, and other property. See advertisement, with figures, in "The Builder" of the 2nd, 16th, and 30th October and 13th November, 1847, also 1st January, 1848. Lists are ready, containing prices, both per number and also per square, per yard, per foot, &c.—Applicants would oblige by stating if they want the prices in Staffordshire or London.—Address 4, Wharf, Macclesfield-street South, City-road Basin.

TO BRICK AND TILE MAKERS.

THE AINSLIE BRICK and TILE MACHINE COMPANY (James Smith, Esq., of Deanston, Chairman) invite attention to their improved Brick and Tile Machines, which are to be seen at work at Alperton, and at the Company's office, 193A, Piccadilly, from Ten a.m., to Five p.m. Mr. Robert Scrivener, who has been appointed manager in the room of Mr. John Ainslie, will show the machines at the works at Alperton, which is within a mile of the Sudbury station of the London and North-Western Railway, and two miles of the Ealing station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London.—All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 193A, Piccadilly.—March 1, 1847. These machines may also be seen at Mr. Slight's, Leith-walk, Edinburgh; Mr. Robert Boyle's, Ayr; Mr. Lawrence Hill's, 135, Buchanan-street, Glasgow; Mr. Robert Charles', Mill-hill, Leeds; Messrs. Penny and Finch's Penkridge, Staffordshire; Messrs. Drummond and Son's, Dublin; and Mr. John Connor, Newton Lindvady, County Derry.

BELL-HANGING done in the most Durable and Scientific manner, by DUDLEY, the Inventor of SECRET BELL-HANGING; who, by means of the extensive practice he has had in the mansions of the Nobility and Gentry in Town and Country, has succeeded in making Bells ring at any distance, however complicated the building; so that the Invalid, or most delicate person, may use them with perfect ease.

The following eminent Architects have employed DUDLEY on all their works; some for the last forty years—viz., Sir Jeffry Wyatville, Bart.; C. H. Tatham; John Shaw; Messrs. Byfield and Seward; Phillip Hardwick, at St. Katherine Docks, &c.; L. Vulliamy and Harrison, Esqrs., &c. &c. &c.—Address, No. 6, Paradise-street, Finsbury-square.

P.S. As unskilful artisans sometimes undertake this useful art, to the great prejudice of their employer, D. will warrant to rectify work badly done, at a fixed price, after examination.

CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP., and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms.—CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

PLATE GLASS.

THE LONDON and MANCHESTER GLASS COMPANY have opened their London Warehouse, 12, RATHBONE-PLACE, with an extensive Stock of Plate Glass of pure colour, strong substance, and most brilliant polish, which will be supplied to the Trade at VERY CONSIDERABLE DISCOUNTS from the tariff prices.

ROUGH PLATE GLASS, of every thickness, at very low rates. J. L. GRUNDY, Company's Agent.
12, RATHBONE-PLACE.

UNION PLATE-GLASS COMPANY.— Architects, Builders and the Trade generally are solicited to inspect the quality, colour and substance manufactured by this Company. To encourage the use of Plate Glass for glazing, a further reduction in price has taken place on the quality used for the purpose.

ROUGH PLATE GLASS supplied ⅛, 3-8, ¼, and ⅜ inch thick. Particular attention is requested to the superior colour and evenness of this article.

LONDON WAREHOUSE, 99, Hatton Garden, Holborn.
H. CHRISTIE, Agent.

SOHO PLATE GLASS COMPANY, 26, Soho-square.—Established for the EXCLUSIVE SALE of the PLATE GLASS Manufactured by the St. Gobain, St. Quirin, and Cirey Companies, Paris. The Trade are informed that this Plate Glass, which is of the very best colour and quality in the market, can be supplied of any dimensions, and at very reduced prices. Rough Plate Glass for Skylights, quarter, three-eighths, half, and three-quarters inch thick.

ALFRED GOSLETT, Agent.

SOHO CROWN, SHEET, and PLATE-GLASS MANUFACTORY, 26, SOHO-SQUARE.—ALFRED GOSLETT (Agent for the EXCLUSIVE Sale of the FRENCH Plate Glass) begs to inform the Trade generally that he has added to his present Establishment an extensive WHOLESALE Warehouse and Cutting-room for the Sale of Crown, Sheet, Patent Plate, Coloured and Ornamental Glass. The Stock and Patterns will be found of a very superior description, and the charges upon a very reduced scale. Tenders and Lists of Prices will be forwarded upon application.

CHAS. WM. WATERLOW,
MANUFACTURER
of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.

SHOP FRONTS, SASHES AND FRAMES, DOORS, &c. MADE FOR THE TRADE.

JOHNSON and PASK,
1, Amwell-street, Clerkenwell, near the New River Head,

Beg to inform the Trade, and the Building Public in general, that they continue to manufacture Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joiners' work, on the lowest possible scale of prices. All kinds of Wainscot and Mahogany work done in the very best manner; French polished, and carefully packed for the country.—A full list of prices orwarded by return of post, to any part of the country.

GLASS FOR CONSERVATORIES.— JAMES PHILLIPS and Co., 116, Bishopsgate-street Without, are supplying SHEET GLASS at the following reduced Prices for Cash.

HORTICULTURAL GLASS FOR CONSERVATORIES.

CUT TO SIZE UP TO 40 INCHES LONG.		SMALL SQUARES OF SHEET.	
		4 by 3 and 4½ by 3½	11d. per ft.
16 oz. to the foot	8½d. per foot,	5 .. 3 " 6½	2 "
21 "	5 "	6 .. 4 " 6½ .. 4½	2½ "
26 "	7½ "	7 .. 5 " 7½ .. 5½	2½ "
39 "	10 "	8 .. 6 " 8½ .. 6½	2½ "
		Not above 10 .. 8 .. 8	3 "

GLASS MILK-PANS, PROPAGATING GLASSES, and BEE GLASSES. GLASS TILES and SLATES.

CREAM-POTS, from 3 to 24 quarts, at 6d. per quart.

CUCUMBER GLASSES, from 12 to 36 inches long, 1d. per inch.

LACTOMETERS for trying the quality of Milk, 4 tubes, 7s. 6d.; 6 tubes, 10s.; and every article in the trade.

SPECIMENS of the newly-discovered mode of SKETCHING from NATURE may be seen at No 60, Welbeck-street, Cavendish-square, on MONDAYS, WEDNESDAYS, and FRIDAYS, till Twelve o'Clock.—Mr. WALKER has had the honour to instruct several of the Royal Academicians, and many of the first Artists of the day, and also the Nobility and Gentry. Parties in the Country are supplied with the whole of the Materials. Prepared Paper, &c., and a full and easy explanation of the mode, on application to Mr. WALKER.

N.B. This mode of Drawing is most rapidly effective.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS, Manufactory, 96, REGENT-STREET and 121, CHANCERY-LANE. Patent sealed on the 4th day of February, 1845, for Fourteen Years, for Improvements in Revolving Shutters of WOOD and IRON, consisting of Six Methods of Raising and Lowering Shutters, without Machinery, and Two for Hinging and Sheathing the Edges of Wood Laths with Iron.—The Patentee having fixed up some hundreds, will feel pleased in forwarding the Testimonials of Architects, Principals of large Establishments, and others, having them now in use, which fully guarantees the Patentee in stating they are beyond dispute superior to any other Revolving Shutter for durability, security, and simplicity, without the use of cog-wheel worm and screw gear, or any other complicated machinery employed by other makers.

BUNNETT and CORPE, ENGINEERS,
Patentees of
REVOLVING IRON AND WOOD SAFETY SHUTTERS,
and of
ORNAMENTAL METALLIC SASH BARS, MOULDINGS, &c., IN BRASS, COPPER, ZINC, &c.

Sole Licencees for the manufacture of MARVIN'S PATENT DIAGONAL GRATINGS, for Areas, Balcony Floors, &c.

The superiority of Bunnet and Corpe's Patent Revolving Iron Shutters is sufficiently established by their most extensive use, and the fact of their having superseded all others; every improvement suggested by practical skill and experience have been adopted, and the prices greatly reduced, to render them the CHEAPEST, as well as BEST IRON SHUTTERS.

B. and C. have also made great (registered) improvements in Revolving Wood Shutters, which are fitted up with proper metallic hinges that cannot rust (without which no shutter can be safe or durable), and are worked by the patent raising gear as for Iron Shutters, or counterbalanced in a new or peculiar way, and are wound up or down with the greatest ease, without the use of objectionable loose lines. A comparison with any others, as to quality and price, is respectfully solicited.

A modification of the above, working vertically, is especially adapted for Bay and Oriel Windows.

The prices of the Patent Metallic Sash Bars, &c. have been revised, and where practical, reduced; Shop Fronts, &c. are completely fitted and fixed in a superior style, either plain or ornamental, and with strong drawn moulded stallboard plates handsomely engraved, also completely glazed with best plate glass.

The Patent Diagonal Wrought Iron Grating will be found a great desideratum for areas at shop fronts, in shop and warehouse floors, and for balcony floors, as it does not obstruct the light, yet admits of ladies walking over or standing on the same.

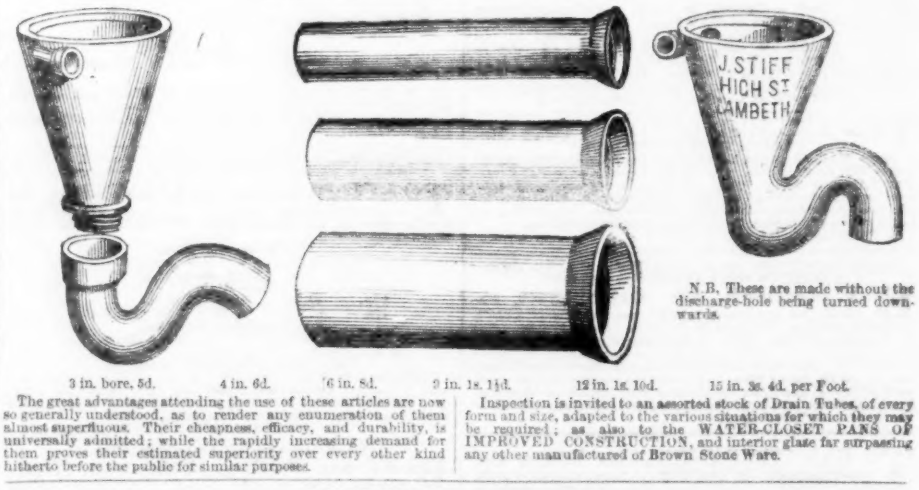
IMPROVED BENCH AND FLOORING CRAMPS FOR BUILDERS,

which are greatly superior to anything hitherto introduced.

Manufacturers of Improved Steam Engines, Sawing and other machinery, especially adapted for builders' purposes, which may be seen in operation, daily, at the Works, Deptford, Kent.

Estimates given, and Contracts taken, in town or country. Patterns, and every particular may be obtained, on application at the Office of the Patentees, 26, Lombard-street, London; and at the Works, Deptford, Kent.

JAMES STIFF, MANUFACTURER of GLAZED STONE WARE DRAIN PIPES BENDS, JUNCTIONS, TRAPS, &c., 39, HIGH STREET, LAMBETH, LONDON. Established 1751.
Water Closet Pans, with Syphon Traps, 7s. 6d. each.
STRAIGHT TUBES, with Socket Joints, in 2 feet lengths.



N.B. These are made without the discharge-hole being turned downwards.

3 in. bore, 5d. 4 in. 6d. 6 in. 8d. 9 in. 1s. 1½d. 12 in. 1s. 10d. 15 in. 3s. 4d. per Foot.

The great advantages attending the use of these articles are now so generally understood, as to render any enumeration of them almost superfluous. Their cheapness, efficacy, and durability, is universally admitted; while the rapidly increasing demand for them proves their estimated superiority over every other kind hitherto before the public for similar purposes.

Inspection is invited to an assorted stock of Drain Tubes, of every form and size, adapted to the various situations for which they may be required; as also to the WATER-CLOSET PANS OF IMPROVED CONSTRUCTION, and interior glaze far surpassing any other manufactured of Brown Stone Ware.

CHEAP AND DURABLE ROOFING.

By Her Majesty's Royal Letters Patent.

F. McNEILL and Co., of Lamb's-buildings, Bunhill-row, London, Manufacturers and ONLY Patentees of
THE PATENT ASPHALTED FELT, FOR ROOFING HOUSES, VERANDAHS, SHEDS, &c.
Patronized by

HER MAJESTY'S WOODS AND FORESTS,
HER MAJESTY'S COMMISSION OF CUSTOMS,
HONOURABLE EAST-INDIA COMPANY,
HONOURABLE BOARD OF ORDNANCE,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANICAL GARDENS, REGENT'S PARK.

And by the most eminent members of the Royal Agricultural Societies of England, Scotland, and Ireland; at whose great national shows it has been exhibited, and OBTAINED THE PRIZE, for being the best and cheapest article for roofing; also used for under slates at the Royal Agricultural Society's House, in Hanover-square.

Its advantages are lightness, warmth, durability, and economy. It is impervious to rain, snow, and frost, and a non-conductor of heat and sound. The Felt can be cut to any length, by 33 inches wide. The price is only ONE PENNY PER SQUARE FOOT. Samples, with full directions as to its uses and the manner of applying it, with TESTIMONIALS, some of them of seven years' experience, from Architects, Builders, Noblemen, and Gentlemen, who have extensively used it, sent free to any part of the town or country. A Dry-hair Felt, for covering Boilers, &c., is also manufactured, by which a saving of about 25 per cent. in fuel is effected. The TRADE are respectfully enjoined to send their orders DIRECT to the FACTORY, as the surest means of being supplied with the genuine article, and in lengths best suited to their roofs. They are likewise CAUTIONED AGAINST MISREPRESENTATION, as THE ONLY WORKS in Great Britain where the above roofing is made are F. McNEILL and Co.'s Manufactories, LAMB'S-BUILDINGS, BUNHILL-ROW LONDON.

Roofs covered with the felt to be seen at the Factory, also the new Vice-Chancellor's Courts, the passages and offices leading to Westminster Hall, and other buildings at the New Houses of Parliament.—A Liberal Discount allowed to the Trade.